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TUBERCULOSIS.

TO WHAT DEGREE IS IT SPREAD BY ASSOCIATION IN HOUSEHOLDS?

In April, 1913, Dr. Edward R. Baldwin of Saranac Lake read a paper before the "Laennec," a society for the study of tuberculosis, of Johns Hopkins Hospital. The paper, entitled "Allergy and reinfection in tuberculosis," was published in the Johns Hopkins Hospital Bulletin for July, 1913. The paper has attracted considerable attention, largely because of the misconstruing of the author's conclusions, and has been the subject of editorial comment in both the medical and lay press.

Dr. Baldwin expressed the opinion that adults are very little endangered by close contact with cases of open tuberculosis and not at all in ordinary association, as practically everyone is infected before reaching adult life and by this infection acquires a degree of immunity against reinfection from others.

In a letter of February 15, 1914, Dr. Baldwin makes the following statement in regard to the subject:

The conclusions which were contained in this paper related to the relatively slight danger of infection in adult life as compared with childhood. Incidentally, I stated that the fear of infection was grossly exaggerated so far as adults were concerned, but I in no way implied that there was no danger of tuberculous infection. The greater danger in childhood was contrasted strongly with that of adults, the reasoning being that as most adults had during their earlier life received more or less infection which had not progressed and largely had become healed, by this means they had acquired some protection against reinfection from outside sources.

In this same connection a study on the spread of tuberculosis in families, recently made in Minneapolis by Herbert G. Lampson, is of especial interest. The investigation was supervised by a committee of which Dr. Geo. D. Head was chairman, and the report was published in December, 1913, as a bulletin of the University of Minnesota.

As a result of his work Lampson concluded that the spread of tuberculous infection in families where open cases of tuberculosis exist is greater than it is generally understood to be.

The two conclusions, one arrived at largely by a careful study of experimental work, the other by a study of families, in some of which were recognized cases of tuberculosis, and in the others no recognized cases, and which are in agreement at least in so far as the recognized danger to children is concerned, are of such interest that they will be given in full.

Baldwin's conclusions are:

In conclusion it seems pertinent to make some practical use of our knowledge of allergy in tuberculosis. If some things sound too speculative, and my deductions are pivoted on too small points, yet we are reasonably sure of some things. These are (a) that most adults have received some tuberculous infection; (b) that a variable degree of specific allergy is thus acquired; (c) that during ordinary health the tissues repel tubercle bacilli, partly with the aid of specific allergy; (d) reinfection is mostly autogenous superinfection and due to disease, overstrain, trauma, or any cause of lowered vitality, whatever that may mean. Finally, (e) as a corollary, adults are very little endangered by close contact with open tuberculosis, and not at all in ordinary association. Childhood is the time of infection, youth the time of superinfection, and that from extension of the primary disease.

Qualify these statements as we may, it is time for a reaction against the extreme ideas of infection now prevailing. There has been too much read into the popular literature by health boards and lectures that has no sound basis in facts, and it needs to be dropped out or revised. More protection of children and better hygiene for adults are logically demanded, but beyond this the preachments about the danger of infection to adults in the present state of society are without justification from an *experimental* standpoint. Deductions from case histories must be accepted without much doubt, when circumstantial evidence is presented showing the source of infection to be recent exposure in adult life. This is particularly applicable to the question of hospital and dispensary contact for nurses and resident staffs. It also applies to alleged infection of married partners, already the subject of careful investigation, without producing satisfactory proof of infection. (Weinberg, Pope, and Pearson.)

Phthisiophobia has had no check from the time the knowledge of the bacillus was popularized. Cornet's dust experiments first gave the impulse to a fear, followed by Flugge's droplet infection, which has aggravated the solicitude felt by physicians and nurses and which has been gradually spread to the laity. Not until the researches that I have briefly laid before you have we had much to show the way to a more correct judgment of the real danger to adults.

Lampson states that the plan of investigation carried out in his work was as follows:

1. Select a given number of families in each of which a case of pulmonary tuberculosis existed at the time of the investigation and which had been living for at least a year prior to the investigation in the home of each of these families.
2. Prove the case to be one of tuberculosis by the finding of tubercle bacilli in the sputum or other excreta.
3. Make a careful scientific study of all the individuals in these families and determine which of them show evidence of tuberculous infection.
4. Make a similar study in a given number of families in which no persons with tuberculosis had been found, and compare these findings with the findings in the tuberculous families.

The recorded results of Lampson's work were as follows:

In 33 families classed as containing open cases of pulmonary tuberculosis, 173 individuals were examined. Of those examined, 124 individuals showed evidence of tuberculous infection, 41 showed no evidence of tuberculous infection, and 8 individuals were doubtful or suspicious. These suspicious cases were those which showed more or less signs of tuberculous infection but gave a negative Von Pirquet test; or not showing physical signs, gave an atypical reaction to the tests employed. All those classed as infected with tuberculosis gave a typical reaction to the tuberculin tests. Of the 8 suspicious cases, 1 has since been declared tuberculous at the University Dispensary and 1 has had a pulmonary hemorrhage; both were adults and neither is included in the list of tuberculous infections.

Among the 124 showing evidence of tuberculous infection are the 23 living center cases. Deducting the 23 center cases, we have 101 individuals presumably infected from 33 open center cases, or $3\frac{1}{3}$ for each case. Excluding the center cases, 67 per cent of the individuals exposed showed evidence of infection with the tubercle bacillus.

In 4 families classed as containing latent center cases, 22 individuals were examined. Of those examined 8 showed evidence of tuberculous infection and 3 were suspicious. Deducting the 4 center cases, we have a spread of infection in 22 per cent of individuals exposed.

In 3 families classed as containing healed center cases, 12 individuals were examined. Of the 12 examined, 6 showed evidence of tuberculous infection. Deducting the 3 center cases, we have a spread of infection in 33 per cent of the individuals exposed.

In 10 families classed as containing nontuberculous center cases, 56 individuals were examined. Of the 56 examined, 1 individual showed evidence of tuberculous infection, and 2 were suspicious, an infection of 1.7 per cent of all individuals in the household.

In 5 families classed as controls and containing no reported or suspected cases of tuberculosis, 24 individuals were examined. Of those examined, 1 showed evidence of tuberculous infection, 4.1 per cent of all individuals in the household.

Dividing all families examined into two classes, tuberculous and nontuberculous, there were 40 tuberculous families and 15 nontuberculous families. In the 40 tuberculous families 207 individuals were examined, of whom 138 individuals showed evidence of tuberculous infection. In the 15 nontuberculous families 80 individuals were examined, of whom 2 showed evidence of tuberculous infection and 2 were suspicious. That is, 66 $\frac{2}{3}$ per cent of individuals examined in tuberculous families showed evidence of tuberculous infection, and 2 $\frac{1}{2}$ per cent of the individuals examined in nontuberculous families showed evidence of infection with tuberculosis.

Among the 40 tuberculous families there are 10 families containing 54 individuals, of whom every member was examined, and in which every member showed evidence of tuberculous infection.

Three families containing 12 members, of whom 7 were examined, showed evidence of tuberculous infection in all those examined.

His conclusions were:

I conclude from the above studies, first, that the spread of tuberculous infection in families where open cases of tuberculosis exist is greater than it is generally understood to be. Sixty-seven per cent of the individuals of these families, excluding the center cases, show evidence of tuberculous infection. In no case where there has been definite proven exposure of a family to an open case of tuberculosis, no matter what precautions have been taken, have I failed to find a spread of infection. In at

least 10 cases investigated the infection has spread to the limit of available material. Every member of these 10 families shows evidence of tuberculous infection.

Second, that in families where no cases of tuberculosis have been found, no matter what the home life or living conditions were, the number of individuals showing evidence of tuberculous infection was small, namely $2\frac{1}{2}$ per cent.

Third, that in families where cases of latent tuberculosis exist, the spread of infection is not as great as in families where open cases of tuberculosis are found, 22 per cent against 67 per cent.

Fourth, that in families where healed cases of tuberculosis are present, the spread of infection is less than in families where open cases exist, 33 per cent against 67 per cent.

Fifth, that in families where no tuberculosis is found, the number of individuals showing evidence of infection is very small ($2\frac{1}{2}$ per cent), in comparison with the families in which open, latent, or healed tuberculosis exists.

Baldwin's conclusions, as previously stated, were based largely upon an analytical study of the experimental work which has been done on immunity and the susceptibility of a once-infected animal to superinfection or reinfection.

Lampson's conclusions, on the other hand, were based on an epidemiologic study of families. It is possible that a number of the individuals in tuberculous families whom he found to react to tuberculin and in many of whom he found clinical symptoms suggesting tuberculous infection had but received the infection which most of those who live to adult life are presumed to receive in one way or another, and which usually produces a degree of immunity. Many of these individuals may never become actively tuberculous. However, the marked difference between his findings in families in which there were recognized cases of tuberculosis and in those in which there were not was so great that his work assumes an unusual significance in public health administration. Similar investigations should be carried on by health departments in other cities to ascertain whether the conditions of household infection found by Lampson in Minneapolis exist elsewhere.

ROCKY MOUNTAIN SPOTTED FEVER.

A REPORT OF ITS INVESTIGATION AND OF WORK IN TICK ERADICATION FOR ITS CONTROL DURING 1913.

By L. D. FRICKS, Surgeon, United States Public Health Service.

Introduction.

At the close of the season of 1912, after eradivative measures had been suspended, Passed Asst. Surg. T. B. McClintic, who had been in charge of tick eradication and investigations of Rocky Mountain spotted fever in the Bitter Root Valley, Mont., for two years, himself became infected and died of the disease.

Dr. McClintic's laboratory investigations for the season of 1912 have not yet been published. Among them were included the determination of the percentage of infected ticks, and the discovery of immune (and therefore presumably previously infected) ground squirrels from several districts on the west side of the Bitter Root Valley.

During the winter of 1912 the Legislative Assembly of the State of Montana created a State board of entomology composed of the State entomologist, the secretary of the State board of health, and the State veterinarian, directed said board to take steps to eradicate and prevent the spread of Rocky Mountain spotted or tick fever, authorized the board to prescribe necessary treatment for domestic animals in infected territory, and appropriated for this purpose \$5,000 for the year 1913.

The money set aside by the Public Health Service for the investigation of Rocky Mountain spotted fever and for cooperation with the State health authorities in tick eradication in the Bitter Root Valley (\$10,000) unfortunately was not available until the end of June, and this was too late to begin a more extensive eradivative campaign than had been at first outlined.

Surg. L. D. Fricks, taking the place of Passed Asst. Surg. McClintic, was detailed to make investigations of Rocky Mountain spotted fever in Montana during 1913 and to cooperate with the Montana State board of health as to the measures necessary for its eradication from certain selected areas. He arrived in Missoula, Mont., March 30, and after conferences with the governor, the State health officer, and the State board of entomology, the Public Health Service was asked to take charge of the eradivative work in the southern half of the Bitter Root Valley. This territory is approximately 50 miles long by 10 miles wide. It lies on the west side of the valley, extends up into the Bitter Root Mountains, and includes the district over which the Public Health Service had conducted tick eradivative measures and laboratory investigations for the two years previous.

Tick Eradication.

It is now generally accepted that the wood tick *Dermacentor andersoni*, plays the important rôle in the transmission of Rocky Mountain spotted fever, and even those oldest inhabitants of the Bitter Root, who still cling to the sawdust and snow-water theories of infection, at the same time exhibit a wholesome respect for the *Dermacentor*. Measures for the suppression and prevention of Rocky Mountain spotted fever have been directed entirely toward the eradication of the ticks, and the only question involved has been to find a practical method of destroying them.

Heretofore the only measures for tick eradication systematically enforced in the infested territories have been:

- (a) Dipping of domestic animals in arsenical dips.
- (b) Killing of wild mammals over a limited area.

Individual property owners from time to time continue to place under cultivation their holdings of arable land on the west side of the valley at a cost of from \$10 to \$15 an acre and wherever this is done the ticks are practically eradicated; also, certain of the farmers who are convinced of the benefit to be derived from burning over the foothills as a means of killing the ticks start sporadic fires whenever they will burn, but no concerted action had been taken along this line until the present season, when arrangements were made with the Forest Service for a systematic burning early each season.

Dipping of Domestic Animals.

The Public Health Service, in cooperation with the State health authorities, has operated a dipping vat at Victor, Mont., since June, 1911, for the purpose of destroying adult ticks on domestic animals during the tick season. The working radius of this vat was fixed at 5 miles and all the domestic animals within this radius which were believed to harbor ticks have been driven in and dipped periodically at intervals of from two to three weeks. During the first two seasons there was no law compelling the owners to dip their stock, but with few exceptions they permitted it to be done.

During the winter of 1912-13, as above stated, the State legislature enacted a law empowering the State board of entomology to take steps to eradicate and prevent the spread of Rocky Mountain tick fever and made it a misdemeanor punishable by a fine of \$100 to violate any of the rules or regulations of said board.

The State board ruled that all cows, except milking cows, horses, mules, asses, and dogs within the tick-control districts on the west side of the Bitter Root Valley, where dipping vats had been erected, should be periodically dipped under the direction of the officer in charge of the eradication work.

This law was of great value in carrying on the work this season.

At the beginning of the tick season for 1913 a complete census of all live stock in the Victor district was taken and gave the following result: Horses and cattle in district, 1,856. Of these, approximately 400 animals (350 cattle and 50 horses) ranged over the tick-infested area and were regularly dipped for the destruction of adult ticks. The remaining 1,400 or 1,500 domestic animals were comprised under two heads: Those which did not range on tick-infested areas and were therefore free from ticks, and another very small proportion of dairy cows and work horses which were allowed to be cleaned of ticks by hand.

The number of domestic animals is given as "approximate" because there was a small fluctuation in the number of animals within the district during the tick season and a certain shifting of other animals from noninfested to infested territory, or vice versa. For instance, following a succession of hot days in June practically all of the cattle were driven out of the wooded foothills by blood-sucking flies (*Tabanidæ*).

A census was also taken of the domestic animals in the Hamilton district. The number of animals in this district was slightly less than in the Victor district and not more than 300 were found in tick-infested territory.

No census was made of the Gold Creek district except for the animals ranging in the tick country. These were found to number approximately 250.

In the district south of Gold Creek around Darby so few cattle were found ranging into the foothills that the idea of constructing a dipping vat there was abandoned.

It is interesting to note that the foothills in this district have been generally cleared within the past few years and are now covered with young orchards. Also, that no cases of spotted fever have been recently reported from this district except those coming from well up the canyons.

Owing to the very late spring in the Bitter Root Valley, actual dipping of domestic animals did not begin at Victor until April 18. From April 19 to 26 it was too cold to put live stock through the dipping solution and there were other delays for the same reason during the first weeks of May, so that the domestic animals in the tick-infested territory were not all dipped until May 14. This included the following animals:

Horses.....	39
Cattle.....	328

Redipping was begun on May 21 and completed June 19, as follows:

Horses.....	44
Cattle.....	305

At the request of the owners 180 sheep were dipped immediately following shearing in order to destroy the "sheep ticks" (*Melophagus ovinus*) which they harbored. No wood ticks (*Dermacentor andersoni*) were observed on the sheep at the time of dipping.

There can be no question of the necessity for dipping horses and cattle which are allowed to range over tick-infested territory in order to prevent the further propagation of ticks; but under unfavorable climatic conditions, such as prevailed at the beginning of this season, it is too much to hope that all ticks which attach themselves to domestic animals can be prevented from ovipositing by this means.

One warm sunshiny day in March is sufficient to bring forth the adult ticks and when this is followed by a week or more of freezing weather, as occurred this season, during which it is impossible to use the dip, some females may be fertilized and drop off for egg laying before it is possible to destroy them.

Evidence of this in the form of healing tickbites was found, both on horses and cattle, during April and while some of these bites may have been caused by *Dermacentor albipictus* there is no reason for trusting that all were so caused.

A continuous inspection of animals suspected of harboring ticks was maintained in the Victor district during June, July, and August, although the dipping was discontinued on June 19. No ticks were found on domestic animals after this date.

Dipping Solutions.

The dipping solution used at the beginning of the season was that given in Farmers' Bulletin No. 378, Department of Agriculture, the formula for which is as follows:

Sodium carbonate (sal soda).....	pounds..	24
Arsenic trioxide (white arsenic).....	do....	8
Pine tar.....	gallons..	2
Water to make.....	do....	500

With the arsenic purchased in the open market this solution gave on analysis 0.169 per cent of arsenious oxide (As_2O_3). It was found that this solution did not have sufficient strength to kill the engorged female ticks. Various changes in the strength of the solution were made up to 0.228 per cent, but the use of this dip was followed by serious complaints from the owners of the cattle. Hence, it would seem that a dip which can be used with impunity on the range cattle of Texas is entirely too strong for use in the Bitter Root Valley.

A chemical analysis was made by the State chemist of each solution before it was used, and after experimenting with different strengths it was concluded that a solution of 0.2 per cent arsenious oxide (As_2O_3) gave the best results in killing ticks without serious

injury to the stock. This strength of arsenic, however, will not kill or prevent egg laying by all the engorged females.

The average time required by a cow in swimming through the Victor vat was found to be 15 seconds and the ticks submerged that length of time, whether unengorged or engorged, were killed or incapacitated by the solution.

Unfortunately, one of the favorite sites of attachment of the ticks on cattle is around the horns, ears, and high up on the neck. The cattle swim with their heads out of the solution, and it is almost impossible to completely submerge them for longer than 1 second. This period of exposure to the solution is not sufficiently long to do serious harm to the engorged females in any strength which can be borne by the live stock.

Construction of Dipping Vats.

In accordance with the agreement entered into with the State authorities, a dipping vat with corrals complete was constructed in the Hamilton district at a cost of \$800, which was paid for out of the State funds. This vat was completed and placed in operation on July 8. A small number of animals were dipped, but in the absence of ticks, due to the lateness of the season, the dipping was discontinued.

An additional vat was constructed by the Public Health Service on Goid Creek, 9 miles south of the Hamilton vat, at a cost, including corrals, of \$750. New corrals were also erected in connection with the Victor vat. As a result the service now has the southern half of the Bitter Root Valley, in which it has been requested to carry on eradication tick measures, covered by three vats from 8 to 10 miles apart, all ready for operation as early next season as the weather conditions will permit. No more vats, under present conditions, can be used in this territory.

Destruction of Wild Animals.

In the 8 square miles immediately west of Victor, over which Passed Assist. Surg. T. B. McClintic destroyed several thousand small animals during the season of 1911 and 1912, there was a noticeable scarcity of ground squirrels (*Citellus columbianus*) as compared with other similarly situated sections on the west side of the valley. But it was also noticeable that the squirrels had begun to reoccupy their old haunts in certain localities.

No money was available for the destruction of wild animals until late in the season, when an active campaign was begun against the ground squirrels.

Objection has been made to a general eradication campaign against the small rodents in the Bitter Root Valley because of the expense

involved. This objection is without doubt well founded unless the land owners on the west side can be persuaded to cooperate in the work and thus reduce the cost.

In view of the fact that the ground squirrels are the most numerous rodents found in the valley, that they are serious agricultural pests, that they harbor a high percentage of immature ticks and, as shown by McClintic's experiments of 1912, that they presumably serve as relay stations for the perpetuation of the Rocky Mountain spotted-fever virus among ticks which, in default of some such susceptible host, would gradually become extinct, the advisability of formulating a practical plan for the destruction of these animals was carefully considered.

Late in the season 12 squirrel destroyers, or carbon bisulphide pumps, of the pattern used by the Public Health Service for killing ground squirrels on the Pacific Coast, were procured and their use was demonstrated to the farmers on the west side of the valley.

Each land owner was informed that if he wished to rid his holdings of squirrels during the season of 1914 he would be furnished with a pump for a definite period and supplied with the necessary carbon bisulphide for its use.

This plan appeared to meet with general approval, and since the labor is the principal item of expense, it is expected that considerable good may be accomplished with a moderate expenditure by the service.

Experiments were also begun over a small area in order to determine the feasibility of destroying ground squirrels by the use of carbon bisulphide during the period of hibernation. Certain squirrel holes were marked while occupied by squirrels, properly charged with carbon bisulphide after the squirrels had hibernated, and will be closely watched for emerging squirrels next spring and the results noted.

Tick Surveys.

For the purpose of determining the relative extent of tick infestation in different sections of the Bitter Root Valley and to serve also as a check upon the efficacy of the eradication measures which are to be enforced in the valley, tick surveys were begun, during the season, of several localities both on the east and west sides of the valley.

The method adopted for the collection of ticks was that used by the Bureau of Entomology. A strip of cotton flannel two yards wide was dragged over a selected course at least one-half mile long, and the drag examined at frequent intervals for ticks. Courses were laid out which included, as far as possible, the various physical features and changes in vegetation to be found in the section under investigation. In this way the number of ticks per square mile was estimated in the different sections surveyed, and while neither exact

nor complete, information derived from the surveys was of great practical value, illuminating, as it did, one of the obscure phases of the spotted fever problem in the Bitter Root Valley, namely, why the disease has never spread around the head of the valley to the east side; also, indicating the limitations of eradivative measures confined solely to the valley proper.

The following surveys were made:

1. Surveys on east side of valley; Sleeping Child and Willow Creek Canyons.
2. Surveys of foothills on west side; Victor district.
3. Cross sections of Bitter Root Mountains to points well above snow line, Victor district.
4. Surveys at heads of canyons, "goat country" on west side.

The surveys on the east side of the valley began at the foothills, approximately 10 miles east of the Bitter Root River opposite Hamilton, and extended back into the Rocky Mountains a distance of 15 to 20 miles. No marked difference was observed between the vegetation covering the mountains on the east side and that on the west, nor was there any appreciable difference in the number of small wild animals. There was this difference, however: Sheep had been closely grazed over this territory since about 1890 and other domestic animals practically excluded.

The surveys were made during the latter part of May and first part of June. Not one tick was found in the sheep country.

It is understood that ticks are fairly abundant on the east side of the valley north of these points where cattle instead of sheep have been allowed to range in recent years.

The surveys on the west side of the valley showed practically no ticks on the cultivated lands, extending up to the foothills; then a zone of heavy tick infestation along the hills where horses and cattle are allowed to range. Above the range of domestic animals a zone of moderate infestation estimated in one section as high as 7,040 ticks per square mile and above this certain areas, known as the "goat country" because of small roaming herds of Rocky Mountain goats, where the ticks were found in far greater numbers than in any other section surveyed, and estimated at millions per square mile.

From the findings enumerated above it would seem that no eradication campaign against spotted fever of the Bitter Root Valley can be complete which does not include some measure for the creation of a tick-free zone extending as far as possible up into the Bitter Root Mountains. Some method of protection must be provided, some buffer must be interposed, against the introduction by wild animals of ticks from above, a comparatively high percentage of which are known to be infective, before there can be any lasting security to the inhabitants in the valley below.

Sheep Grazing.

A study of tick conditions in the Bitter Root Valley and the methods of tick eradication which have been enforced heretofore led naturally to the question of whether there might not be some improvement or extension made in the campaign against the ticks which are responsible for the transmission of Rocky Mountain spotted fever to man.¹ With this end in view an investigation of sheep grazing in the valley was made and experiments were conducted with a flock of sheep in the tick-infested territory west of Victor, Mont., in order to determine the possible value of sheep grazing as a means of tick eradication in the valley. These experiments were made the subject of a previous report on their completion in June, 1913.²

Later the Bureau of Entomology of the Department of Agriculture began experiments along the same line in the Florence district. The findings as published by the Bureau of Entomology with unshorned sheep were quite as satisfactory as those previously observed and published by the Public Health Service. Upon six free-grazing sheep they reported 90 dead ticks and only two engorged females recovered, and of 69 ticks—23 males and 46 females—placed on two unshorned sheep, only one engorged female was recovered.³

The conclusions of the representative of the Bureau of Entomology, however, as to the probable value of sheep grazing in tick eradication were by no means favorable, but in view of the findings already reported, the high mortality among ticks attempting to attach themselves to unshorned sheep, and the lack of ticks in territory closely grazed by sheep in the Bitter Root Valley, together with the knowledge that the higher reaches of the Bitter Root Mountains are infested with ticks ever ready to serve as foci for reinfesting the west side of the valley even though it should be rendered tick free by the dipping of domestic animals alone; and above all in view of the possibility of placing the problem of tick eradication on an industrial basis so that the farmers may reimburse themselves for their own protection, there can be no question as to the desirability of continuing the sheep-grazing experiments along the lines proposed by the Public Health Service.

Because of the several factors which enter into the proposition of sheep grazing as a means of tick eradication no estimate can be made of the entire value to be derived therefrom until the experiment has been conducted on a large scale over a definite area for at least two seasons.

¹ McCalla and Brerton, 1905; cited by Ricketts. King, Public Health Reports, July 27, 1906. Ricketts, Journ. Am. Med. Assn., 1906, vol. 47, p. 358.

² Public Health Reports, Aug. 8, 1913.

³ Dept. Agriculture Bull. 14, Nov. 22, 1913

Investigation of the Geographical Distribution of Rocky Mountain Spotted Fever.

The most important phase of the Rocky Mountain spotted fever problem from a public-health standpoint is the question of the prevalence and geographic distribution of infective ticks in nature. Unfortunately, there is no way of determining the extent of this infection because of the enormous territory involved, its sparse settlement, and the fact that the common measure of tick infection is an accidental occurrence in the life history of the tick, that is, the attachment of an infective tick to a susceptible human being. Since the percentage of infective ticks determined experimentally in a heavily infected district, such as the west side of the Bitter Root Valley, is very small indeed, the probability of discovering all the areas of infection until they become fairly thickly settled is extremely remote.

By attaching ticks from the west side of the Bitter Root Valley in groups to guinea pigs Ricketts found one or more infective ticks in a group of 36 out of 296 ticks used in the experiment.¹ Maver found 2 ticks out of 402,² and McClintic, in 1912, 6 ticks out of 1,037 from the same region.

The obvious impossibility of using such a method for the determination of tick infection over the entire Rocky Mountain region emphasizes the importance of obtaining and carefully compiling the morbidity and mortality records of Rocky Mountain spotted fever from all the Western States.

According to the Bureau of Entomology the ticks which transmit Rocky Mountain spotted fever in nature (*Dermacentor andersoni* (Stiles) and *Dermacentor modestus* (Banks)) are distributed over approximately 600,000 square miles extending throughout the northern part of the Rocky Mountain region west to the Cascade Range and south to New Mexico.³ No authentic case of Rocky Mountain spotted fever in human beings has been known to occur outside of this territory, but the disease has been transmitted experimentally to guinea pigs by eastern ticks after the ticks had been infected.

Certain clearly defined areas of infection in the Rocky Mountain region, such as the southern Bitter Root Mountains in Montana and the Snake River Valley in Idaho, have been known for years; but there are undoubtedly many more from which cases of spotted fever have not been reported and of which no record exists. No doubt there are infective ticks in other sections as yet unsuspected simply because one of these ticks has not happened to attach itself to a human being.

No understanding of the Rocky Mountain spotted fever situation can be had until the physicians of the Rocky Mountain region record

¹ Trans. Chicago Path. Soc., 1907.

² Maria B. Maver, Journ. Infec. Dis., 1911, vol. 8, p. 322.

³ Hunter and Bishopp. Dept. Agriculture, bull. 105.

and report their cases of this disease, including particularly the place of infection. From these data the areas of infection can in time be charted and the questions of extension, restriction, and eradication of infective ticks determined.

Letters were written to the health officers of the different States in the Rocky Mountain region last season for information in regard to the prevalence of Rocky Mountain spotted fever in their respective States, and at the request of the health officers of Oregon and Washington an investigation was made of suspected cases in each of those States. The information obtained is given below briefly by States:

California.—

Year.	Cases.	Died.	Recovered.
1911	1	1	.....
1912	1	.....	1
1913	.....	.....	.....

Both these cases were from Lassen County in the extreme northeastern part of the State. This area of infection has been known for several years.

Colorado.—There was no record of any case having occurred during 1912 or 1913. Once in a long while a case of Rocky Mountain spotted fever is heard of but none reported. Cases have been reported from Carbondale and Rifle in Garfield County.

Idaho.—The record of spotted fever in Idaho has been accurately kept since 1908 at least. The disease, of the mild type, is well known and generally recognized throughout the Snake River Valley. The State health officer charts each year the cases and deaths reported by counties. The record for the last four years is as follows:

Year.	Cases.	Deaths.
1910	222	7
1911	334	9
1912	197	6
1913	239	4

The report for Soda Springs, Bannock County, the heaviest point of infection known, is interesting because of the lack of fatalities. It is as follows:

Bannock County, Idaho.

Year.	Cases.	Deaths.
1910	52	.....
1911	90	.....
1912	71	.....
1913	40	.....

Montana.—The following table shows the cases reported in Montana during the last three years:

Year.	Cases.	Deaths.
1911	17	6
1912	12	9
1913	8	7

There are three well-known areas of infection in Montana: The west side of the Bitter Root Valley in Ravalli and Missoula Counties, the Rock Creek district in Granite County, and the Bridger district in Carbon County, which extends south into Wyoming. One or two cases have been reported from other points in the State, but the records do not definitely establish any foci of infection other than those given. The fatality rate is high throughout the State of Montana, but the number of cases is decreasing, particularly in the Bridger district.

Dr. L. A. Gates, of Bridger, who reported four cases in 1903 and four in 1904,¹ has seen only three cases in the last three years. He accounts for the decrease in the following ways: (a) There is less stock of all kinds in the valley. (b) Much land has been cleared of brush and put in cultivation during the past few years. (c) Since the inhabitants have become acquainted with the cause of the disease they are very much more careful to avoid being bitten by ticks.

Nevada.—The State health officer reported for 1913 seven cases of spotted fever with one death. Four of these cases were in Humboldt County and three in Mineral County. The area of infection in Humboldt County has long been known and includes cases reported from Quinn River Valley, Paradise Valley, Winnemucca, and Fort McDermitt.² Upon further request, Dr. H. Duesing gave some very pertinent observations on spotted fever in the Paradise Valley, where he was health officer for three years, from which the following extracts are taken:

Year.	Cases.	Deaths.
1911	14	.....
1912	6	.....
1913	4	1

Spotted fever appeared in the valley in 1880, and since then approximately 330 cases with 30 deaths have occurred. Indians are not immune, but only one Indian has died from the disease in the valley since 1880. One attack conveys absolute immunity and one-third of the native population in the valley have had spotted fever. He believes from observation that about 10 per cent of the ticks in this section are infective and that a tick must attach for at least two hours before it can transmit the disease. Spotted fever in the Paradise Valley never begins with a frank chill, nor is there any abrupt elevation of temperature. Except in fatal cases just before

¹ Hygienic Laboratory Bull. 20, April, 1905.

² Kendall and Robinson. Cited by Rucker. Public Health Reports, Sept. 6, 1912.

death, the pulse and respiration are always slow. It is not unusual to find a patient with a temperature of 102.5 and a respiration of 18, even at an elevation of 6,000 feet. Spotted fever in the Paradise Valley resembles a combination of typhoid fever and measles. Cases are sometimes seen with not more than 15 spots and others with the body covered. The more spots the more grave the prognosis. Frequently the disease is as mild as measles among children.

The infection in Mineral County was discovered by Dr. F. C. Pache and, so far as known, the three cases seen by him are the first reported from this section of Nevada. The discovery was purely accidental. A cinnabar strike in the mountains 11 miles out of Mina was followed by a moderate rush into the district by prospectors in the latter part of June, July, and August. Twenty-five persons were exposed to tick bites by living in the woods and sleeping on the ground. Three cases of spotted fever developed; one severe, with rash covering the entire body, one moderately severe, and one mild. It seems probable that if this rush into the mountains had taken place earlier in the season more cases would have resulted.

In the Bitter Root Valley the tick season is practically over by the 1st of July and few cases of spotted fever develop after June.

Oregon.—Two cases of spotted fever were reported for 1913 from Malheur and Harney Counties. One of these cases was seen in La Grande, Oreg., with the State health officer, three months after recovery. The history of this case was as follows: W. M. W., age 55, itinerant minister. Slept in the brush near Drewsey, border of Harney and Malheur Counties, May 16. Next morning found 11 ticks attached to body. Two days later found 2 partially engorged ticks in arm pit, and the following day 1 fully engorged tick. Patient believed that the 14 ticks were acquired at the same time. On May 29 he was taken sick suddenly. This would give an incubation period of from 10 to 13 days, which is longer than usual. When seen, the patient's body was still covered with brownish blotches, averaging the size of a split pea. According to Maxey, Stewart, and Smith these may persist for years¹ and when present should aid in establishing the diagnosis of Rocky Mountain spotted fever, since they are extremely rare in other infectious diseases except typhus.

Two other cases reported as spotted fever from Cove, in Union County, were investigated with the State health officer. These cases were both in young children, who died within 48 hours after being taken suddenly ill. The history in both cases pointed to malignant scarlet fever.

Cases of spotted fever have been previously reported from southeastern Oregon, Klamath, Harney,² and Malheur³ Counties.

¹ Stewart and Smith. Med. Sentinel, Portland, Oreg., December, 1908.

² Steiner and Geary. Cited by Rucker, Public Health Reports, Sept. 6, 1912, p. 1466.

³ Patterson. Idem.

This area of infection is continuous with that in Humboldt County, Nev., and is very sparsely settled. It is to be expected that with the completion of a railroad through this section of the State, which is now under way, more cases of spotted fever will be reported.

Utah.—The State law does not require the reporting of spotted fever cases and therefore no record is available. The State health officer is of the opinion that no cases have occurred recently. Cases have been reported from Utah and Wasatch Counties in the past.¹

Washington.—Four cases of Rocky Mountain spotted fever occurred in Lincoln County during 1913. These cases were investigated at the request of the State health officer because of the uncertainty among the attending physicians as to the diagnosis. Two cases were reported by Dr. Richards, of Almira. These were seen and were undoubtedly spotted fever, both patients having probably contracted the disease while attending a picnic on Wilson Creek, a few miles southeast of Almira. One patient, reported by Dr. Fryer, of Riverside, contracted the disease in Lincoln County south of Wilbur, but died near Loomis; this patient was traveling overland by wagon and camped on the small streams each night.

Cases of Rocky Mountain spotted fever have previously been reported from Douglas² and Grant² Counties, just west of Lincoln, and Dr. Lee Ganson, of Odessa, reports that he has attended five cases near that place since 1909. Undoubtedly there is an area of infection in these counties which is strictly limited to the wooded streams and coulees. The reason for this is that there is no tick infestation except along the streams, all the arable land being covered by extensive wheat fields.

Wyoming.—Four cases of Rocky Mountain spotted fever were reported from Wyoming during 1913, one from Evanston, one from Caspar, and one from Thermopolis, all in the northwestern part of the State; all these cases ended fatally. This area of infection has long been known; it is continuous with and lies directly south of the infected district in Carbon County, Mont. The other case was reported from Superior, Sweetwater County, in the southwestern part of the State, and no history of the case could be obtained.

Besides the authentic cases reported above from the Rocky Mountain region, two cases have been reported from Ulster County, N. Y., one in 1912 and one in 1913. It was claimed that this infection was brought in by horses shipped from the Bitter Root Valley, but neither of the cases is positively known to have been spotted fever.

Two cases of spotted fever were also reported from Minnesota for 1913, but the histories given point to a septic infection following tick bite rather than to Rocky Mountain spotted fever.

¹ Noyes and Wherritt. Cited by Rucker, Public Health Reports, Sept. 6, 1912, p. 1466.

² Smith. Cited by Rucker, Public Health Reports, Sept. 6, 1912, p. 1466.

EXAMINATIONS FOR HOOKWORM OVA.

TECHNIQUE FOR THE EXAMINATION OF FRESH MATERIAL AND FOR MAKING PERMANENT MOUNTS OF THE SPECIMENS.

By MARK J. WHITE, Surgeon, United States Public Health Service.

1. Agitate about 0.5 gram of feces with 5 or 6 cubic centimeters of water in a small test tube. The centrifuge tube is suitable.
2. Strain through two layers of gauze to remove the too consistent particles of feces, and wash the residue with a sufficient quantity of water so that the total filtrate will properly fill a centrifuge tube.
3. To the tube of filtrate add and diffuse therein 5 drops of a 1 per cent solution of "Toluidinblau" in a 2 per cent aqueous solution of carbolic acid.
4. Centrifugate sufficiently, two minutes.
5. Decant all supernatant fluid.
6. Place two oeses of the sediment on a slide and spread by gentle pressure with a cover glass.
7. Magnify 105 times in a subdued light (oc. 4, ob. 3 Leitz).

The dye imparts blue and purple tints to the fecal material and a light-brown tint to the eggshells. This polychromatic effect greatly facilitates the locating of the eggs, which are then magnified 370 and 1,000 times for the purpose of more definite identification of the blastomeres (oc. 1, ob. 7, and oc. 4, ob. 1/12 oil Leitz).

These stained specimens may be satisfactorily mounted by rimming with melted paraffin. In such mounts the complete development of the egg, including the first embryonic stage, may be watched. As the egg becomes mature and the shell disintegrates, the embryo, whether dead or alive, takes on a purple color, as the result of coming in contact with the small quantity of unattached stain present in the mount. As long as the egg shell remains intact its color is light brown, but as soon as it permits the unattached dye to come in contact with the contained embryo the color of the egg changes, so that instead of a light-brown egg there is a purple egg.

In some instances the embryos entirely escape from their egg shells and lie free in the field, but dead, having taken a beautiful purple color. In others they remain coiled up dead in the egg shells. This change increases the value of permanent mounts, as some of the eggs may remain brown, while others show the embryos stained purple. It is necessary to avoid pressure on these mounts, as the embryos are very fragile, and the movement of the surrounding air bubbles is likely to cause fracture and displacement.

PREVALENCE OF DISEASE.

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.

IN CERTAIN STATES AND CITIES.

SMALLPOX.

Massachusetts Report for January, 1914.

Places.	Number of new cases reported during month.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Massachusetts:						
Hampden County—						
Chicopee.....	1			1		
Suffolk County—						
Boston.....	1					1
Total.....	2			1		1

Indiana—Evansville.

Surg. Oakley, of the Public Health Service, reported by telegraph that during the week ended February 14, 1914, nine cases of smallpox had been notified at Evansville, Ind.

Maryland—Marlboro.

The State department of health of Maryland reported by telegraph February 18, 1914, that one case of smallpox had been notified at Marlboro, Md.

New York—Niagara Falls.

Acting Asst. Surg. Bingham, of the Public Health Service, reported by telegraph that during the week ended February 14, 1914, 39 cases of smallpox had been notified at Niagara Falls, N. Y.

North Carolina—Hendersonville.

Passed Asst. Surg. Foster, of the Public Health Service, reported by telegraph February 18, 1914, that smallpox had been reported present in Hendersonville, N. C., and vicinity.

Tennessee—Norma and Oneida.

Acting Asst. Surg. Bailey, of the Public Health Service, reported by telegraph February 12, 1914, that 30 cases of smallpox had been notified at Norma, and 15 cases at Oneida, Scott County, Tenn.

SMALLPOX—Continued.

Virginia—Oak Grove.

Asst. Surg. Draper, of the Public Health Service, reported by telegraph February 18, 1914, that one case of smallpox had been notified at Oak Grove, Va.

Washington—Seattle.

Surg. Lloyd, of the Public Health Service, reported by telegraph that during the week ended February 14, 1914, seven cases of smallpox had been notified at Seattle, Wash.

Miscellaneous State Reports.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Connecticut (Jan. 1-31):			Florida—Continued.		
Counties—			Counties—Continued.		
Hartford.....	17		Hillsboro.....	3	
New London.....	1		Marion.....	1	
Windham.....	1		Total.....	18	
Tolland.....	3				
Total.....	22		Iowa (Nov. 1-30).....		1
District of Columbia (Jan. 1-31).....	30		Washington (Nov. 1-30):		
Florida (Nov. 1-30):			Counties—		
Counties—			Columbia.....	4	
Alachua.....	1		Cowlitz.....	2	
Bradford.....	1		Ferry.....	1	
Calhoun.....	1		King.....	2	
Duval.....	6	1	Klickitat.....	1	
Escambia.....	1		Okanogan.....	1	
Manatee.....	2		Pacific.....	1	
Pinellas.....	5		Pierce.....	9	
Total.....	17	1	Skagit.....	1	
Florida (Dec. 1-31):			Snokomish.....	3	
Counties—			Spokane.....	44	
Alachua.....	1		Walla Walla.....	12	
Duval.....	13		Whitman.....	10	
			Pend Oreille.....	13	
			Total.....	104	

¹ Supplement. See p. 25.

City Reports for Week Ended Jan. 31, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Altoona, Pa.....	1		Little Rock, Ark.....	2	
Aurora, Ill.....	3		Los Angeles, Cal.....	1	
Austin, Tex.....	5		Marquette, Wis.....	2	
Baltimore, Md.....	18		Milwaukee, Wis.....	41	
Buffalo, N. Y.....	2		Nashville, Tenn.....	22	
Chicago, Ill.....	5		Niagara Falls, N. Y.....	33	
Chicopee, Mass.....	1		Oakland, Cal.....	1	
Cincinnati, Ohio.....	1		Oklahoma, Okla.....	44	
Cleveland, Ohio.....	1		Portsmouth, Va.....	8	
Coffeyville, Kans.....	3		Providence, R. I.....	1	
Columbus, Ohio.....	3		Reading, Pa.....	5	
Detroit, Mich.....	18		St. Joseph, Mo.....	1	
Evansville, Ind.....	12		San Francisco, Cal.....	4	
Hartford, Conn.....	1		Spokane, Wash.....	7	
Kalamazoo, Mich.....	1		Superior, Wis.....	5	
Kansas City, Kans.....	33		Toledo, Ohio.....	19	
Knoxville, Tenn.....	21		Washington, D. C.....	4	
La Crosse, Wis.....	4		Zanesville, Ohio.....	1	
Lexington, Ky.....	16				

TYPHOID FEVER.

State Reports for January, 1914.

Places.	Number of new cases reported during month.	Places.	Number of new cases reported during month.
District of Columbia.....	19	Massachusetts—Continued.	
Massachusetts:		Norfolk County—	
Berkshire County—		Braintree.....	1
Lee.....	1	Brookline.....	3
Pittsfield.....	1	Norwood.....	1
Bristol County—		Quincy.....	1
Fall River.....	7	Plymouth County—	
New Bedford.....	4	Brockton.....	1
Swansea.....	1	Suffolk County—	
Essex County—		Boston.....	108
Berkley.....	1	Chelsea.....	4
Groveland.....	2	Worcester County—	
Haverhill.....	2	Bolton.....	1
Lawrence.....	10	Fitchburg.....	1
Lynn.....	3	Westborough.....	2
Salem.....	1	Winchendon.....	1
Swampscott.....	1	Worcester.....	2
Franklin County—		Total.....	185
Deerfield.....	1	New Jersey:	
Hampden County—		Atlantic County.....	3
Chicopee.....	1	Bergen County.....	1
Holyoke.....	1	Burlington County.....	3
Springfield.....	1	Camden County.....	6
Hampshire County—		Cumberland County.....	4
Northampton.....	1	Essex County.....	7
Middlesex County—		Hudson County.....	10
Cambridge.....	4	Mercer County.....	16
Everett.....	2	Middlesex County.....	2
Holliston.....	1	Monmouth County.....	5
Lowell.....	8	Morris County.....	2
Medford.....	1	Ocean County.....	1
Newton.....	1	Salem County.....	1
Shirley.....	1	Somerset County.....	2
Somerville.....	1	Union County.....	7
Woburn.....	1	Total.....	70

Michigan—Alpena.

The State Board of Health of Michigan reported by telegraph that during the period from January 16 to February 17, 1914, 17 cases of typhoid fever had been notified at Alpena, Mich.

Washington Report for November, 1913.

Places.	Number of new cases reported during month.	Places.	Number of new cases reported during month.
Washington:		Washington—Continued.	
Chehalis County.....	5	Spokane County—	
Columbia County.....	1	Spokane.....	1
King County.....	3	Stevens County.....	1
Seattle.....	7	Thurston County.....	1
Kitsap County.....	1	Whitman County.....	1
Kittitas County.....	2	Yakima County.....	10
Lewis County.....	5	Total.....	40
Pierce County—			
Tacoma.....	21		
Snohomish County—			
Everett.....	1		

TYPHOID FEVER—Continued.

City Reports for Week Ended Jan. 31, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Ann Arbor, Mich.	1	—	Los Angeles, Cal.	1	1
Atlantic City, N. J.	1	—	Lowell, Mass.	1	—
Baltimore, Md.	3	1	Marinette, Wis.	1	—
Beaver Falls, Pa.	3	—	Morristown, N. J.	—	1
Braddock, Pa.	1	—	Moline, Ill.	1	2
Buffalo, N. Y.	9	1	Nashville, Tenn.	1	—
Cambridge, Mass.	1	—	Newark, N. J.	1	—
Camden, N. J.	2	—	New Bedford, Mass.	1	—
Chelsea, Mass.	1	—	New Orleans, La.	1	1
Chicago, Ill.	12	5	Newton, Mass.	1	—
Cincinnati, Ohio.	3	—	Philadelphia, Pa.	8	4
Cleveland, Ohio.	2	2	Pittsburgh, Pa.	2	—
Cumberland, Md.	1	—	Providence, R. I.	1	—
Dayton, Ohio.	—	1	Reading, Pa.	2	—
Dunkirk, N. Y.	1	—	Sacramento, Cal.	13	1
Erle, Pa.	2	—	Saginaw, Mich.	2	1
Everett, Mass.	1	—	San Francisco, Cal.	12	—
Grand Rapids, Mich.	2	—	St. Louis, Mo.	11	3
Harrisburg, Pa.	—	3	South Bend, Ind.	1	1
Haverhill, Mass.	2	—	South Bethlehem, Pa.	1	—
Johnstown, Pa.	1	—	Stoelton, Pa.	1	—
Knoxville, Tenn.	1	—	Toledo, Ohio.	2	1
Lancaster, Pa.	2	—	Trenton, N. J.	1	—
Lawrence, Mass.	10	—	Wheeling, W. Va.	1	—
Little Rock, Ark.	2	—	York, Pa.	2	—

CEREBROSPINAL MENINGITIS.

Massachusetts Report for January, 1914.

Places.	Number of new cases reported during month.	Places.	Number of new cases reported during month.
Massachusetts:		Massachusetts—Continued.	
Middlesex County—		Worcester County—	
Chelmsford.	1	Worcester.	1
Lowell.	1	Total.	11
Malden.	1		
Maynard.	1		
Suffolk County—			
Boston.	5		
Chelsea.	1		

Washington Report for November, 1913.

The State Board of Health of Washington reported that during the month of November, 1913, 1 case of cerebrospinal meningitis had been notified at Everett, Snohomish County, Wash.

Arizona—Nogales.

Acting Asst. Surg. Gustetter, of the Public Health Service, reported by telegraph February 11, 1914, that 2 cases of cerebrospinal meningitis had been notified at Nogales, Ariz.

West Virginia—Rainelle.

Dr. C. R. Wall reported by telegraph February 12, 1914, that 9 cases of cerebrospinal meningitis had been notified at Rainelle, Greenbrier County, W. Va.

CEREBROSPINAL MENINGITIS—Continued.**City Reports for Week Ended Jan. 31, 1914.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Boston, Mass.		1	Lowell, Mass.	1	
Chicago, Ill.	2	2	Manchester, N. H.	2	2
Cleveland, Ohio.	1		Milwaukee, Wis.	2	
La Crosse, Wis.		1	Philadelphia, Pa.	1	1
Lexington, Ky.		1	Pittsburgh, Pa.	1	
Los Angeles, Cal.		2	St. Louis, Mo.	1	1

POLIOMYELITIS (INFANTILE PARALYSIS).*** State Reports for January, 1914.**

Places.	Number of new cases reported during month.	Places.	Number of new cases reported during month.
Massachusetts:		Massachusetts—Continued.	
Bristol County—		Suffolk County—	
Dartmouth.....	1	Boston.....	4
Fall River.....	1	Worcester County—	
North Attleboro.....	1	Southbridge.....	1
Essex County—		Total.....	14
Newburyport.....	1		
Salem.....	1	New Jersey:	
Hampden County—		Cumberland County.....	1
Wilbraham.....	1	Essex County.....	6
Plymouth County—		Passaic County.....	1
Brockton.....	2	Total.....	8
Wareham.....	1		

Washington Report for November, 1913.

The State Board of Health of Washington reported that during the month of November, 1913, 1 case of poliomyelitis had been notified in Pierce County, Wash.

City Reports for Week Ended Jan. 31, 1914.

During the week ended January 31, 1914, 1 case of poliomyelitis was notified at Boston, Mass., and 1 at Brockton, Mass.

ERYSIPELAS.**City Reports for Week Ended Jan. 31, 1914.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Boston, Mass.		2	Passaic, N. J.	1	
Buffalo, N. Y.	7		Philadelphia, Pa.	39	3
Chicago, Ill.	18	2	Pittsburgh, Pa.	7	2
Cincinnati, Ohio.	2	1	Pittsfield, Mass.	1	1
Cleveland, Ohio.	5		Reading, Pa.	2	
Harrisburg, Pa.	1		St. Louis, Mo.	7	
Hartford, Conn.	4		San Francisco, Cal.	2	
Jersey City, N. J.		1	Steelton, Pa.	1	
Lancaster, Pa.	1		Trenton, N. J.		1
Milwaukee, Wis.	1		Wheeling, W. Va.	1	
Nanticoke, Pa.	1		Wilkesburg, Pa.	1	
Newark, N. J.		1			

PELLAGRA.

During the week ended January 31, 1914, pellagra was notified by cities as follows: New Orleans, La., 1 death: Oklahoma, Okla., 2 cases with 2 deaths: Washington, D. C., 1 case.

PLAGUE.**Rats Collected and Examined.**

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:			*		
Cities—					
Oakland.....	Jan. 24, 1914..	6	562	372	.....
Berkeley.....	.....do.....	.....	195	97	.....
San Francisco.....	.....do.....	7	1,804	989	.....

PNEUMONIA.**City Reports for Week Ended Jan. 31, 1914.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Ann Arbor, Mich.....	5	.....	Newport, Ky.....	2	2
Auburn, N. Y.....	2	1	Philadelphia, Pa.....	56	104
Braddock, Pa.....	2	.....	Pittsburgh, Pa.....	26	40
Chicago, Ill.....	206	139	Pittsfield, Mass.....	5	.....
Cleveland, Ohio.....	29	11	Sacramento, Cal.....	1	2
Coffeyville, Kans.....	2	.....	San Francisco, Cal.....	5	5
Erie, Pa.....	1	.....	Schenectady, N. Y.....	13	4
Grand Rapids, Mich.....	1	2	South Bethlehem, Pa.....	9	1
Los Angeles, Cal.....	19	13	Spokane, Wash.....	2	2
Manchester, N. H.....	7	7	Steelton, Pa.....	2	.....
New Castle, Pa.....	1	.....		

RABIES.

During the week ended January 31, 1914, a death from rabies was notified at St. Joseph, Mo.

California—Berkeley and Oakland—Rabies in Animals.

Surg. Long, of the Public Health Service, reported by telegraph that during the week ended February 14, 1914, 2 cases of rabies in dogs had been notified at Berkeley, and 4 cases at Oakland, Cal.

Washington—Seattle—Rabies in Animals.

Surg. Lloyd, of the Public Health Service, reported by telegraph that during the week ended February 14, 1914, 5 cases of rabies in dogs had been notified at Seattle, Wash.

TETANUS.

During the week ended January 31, 1914, 1 case of tetanus was notified at Philadelphia, Pa., and 1 at St. Louis, Mo.

TYPHUS FEVER.

Port of New York Quarantine.

The health officer of the port of New York reported by telegraph February 13, 1914, that a new case of typhus fever had developed in a passenger detained at the New York quarantine from the steamship *Rochambeau*, making the second case from that vessel.

SCARLET FEVER, MEASLES, DIPHTHERIA, AND TUBERCULOSIS.

State Reports for January, 1914.

	Scarlet fever.	Measles.	Diphtheria.
District of Columbia.....	70	158	66
Massachusetts.....	1,444	825	758
New Jersey.....	751	.....	566

Washington Report for November, 1913.

The State Board of Health of Washington reported that during the month of November, 1913, 101 cases of scarlet fever, 174 cases of measles, and 40 cases of diphtheria had been notified in the State of Washington.

City Reports for Week Ended Jan. 31, 1914.

Cities.	Popula- tion, United States census 1910.	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md.....	558,485	229	26	6	8	1	19	1	35	23
Boston, Mass.....	670,585	307	64	6	53	1	102	2	58	15
Chicago, Ill.....	2,185,283	713	185	24	50	1	118	6	195	66
Cleveland, Ohio.....	560,663	149	79	3	27		16	3	29	11
Philadelphia, Pa.....	1,549,008	629	42	11	148		88	5	110	65
Pittsburgh, Pa.....	533,905	171	35	2	21		103	2	29	17
St. Louis, Mo.....	687,029	239	78	3	92		34	2	41	19
From 300,000 to 500,000 inhabi- tants:										
Buffalo, N. Y.....	423,715	116	22		19	1	9		22	11
Cincinnati, Ohio.....	364,463	152	23	3	3		7		26	20
Detroit, Mich.....	465,706		48	4			32	1		
Los Angeles, Cal.....	319,198	112	7		5		11			16
Milwaukee, Wis.....	373,857	116	31	5	41		40	2	31	11
Newark, N. J.....	347,469	123	59		291	2	57	2	30	15
New Orleans, La.....	339,075	143	23	2	22		1		35	14
San Francisco, Cal.....	416,912	139	9	1	14		12	1	22	12
Washington, D. C.....	331,069	130	28	1	68		19		28	11
From 200,000 to 300,000 inhabi- tants:										
Jersey City, N. J.....	267,779	83		1						10
Providence, R. I.....	224,326	81	15	10	16		7		7	10
From 100,000 to 200,000 inhabi- tants:										
Cambridge, Mass.....	104,839	33	3		20	1	8		7	3
Columbus, Ohio.....	181,548	44	3		5		4		16	4
Dayton, Ohio.....	116,577	36	39		49		6			3
Fall River, Mass.....	119,295	41	11	3	2		19		11	5
Grand Rapids, Mich.....	112,571	31	9		17		117	2	3	1
Lowell, Mass.....	106,294	27	4		21				4	3
Nashville, Tenn.....	110,364	42	3		7		5		18	5
Oakland, Cal.....	150,174	43					1		4	3
Spokane, Wash.....	104,402		1		43		7		2	1
Toledo, Ohio.....	168,497	47	2	2	2		11			6
Worcester, Mass.....	145,986	42	3	1	4		5		7	1

SCARLET FEVER, MEASLES, DIPHTHERIA, AND TUBERCULOSIS—Contd.

City Reports for Week Ended Jan. 31, 1914—Continued.

Cities.	Popula- tion, United States census 1910.	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhabitants:										
Altoona, Pa.	52,127	14	1	1			3	1		
Bayonne, N. J.	55,545	15	4	1	20	1	4		5	
Brockton, Mass.	56,878	8	3		6		5		4	1
Camden, N. J.	94,538		4		1		4		5	
Erie, Pa.	66,525	19	4		1		5		4	
Evansville, Ind.	69,647	18	2	1					5	
Harrisburg, Pa.	64,186	23	9		5		2			
Hartford, Conn.	98,915	27	13		2		1		2	1
Hoboken, N. J.	70,324		4		2				10	
Johnstown, Pa.	55,482	14	13	2	5		7			1
Kansas City, Kans.	82,331		3				5		1	
Lawrence, Mass.	85,892		23		3		3		4	1
Lynn, Mass.	89,336	21	7		1		11		3	1
Manchester, N. H.	70,063	34	3	1	4		12		2	2
New Bedford, Mass.	96,652	34	6				22		4	2
Oklahoma City, Okla.	64,205	62	2		21		5			2
Passaic, N. J.	54,773	19	3		11		3		6	2
Reading, Pa.	96,071	34	3	1	3		10	1	11	7
Saginaw, Mich.	50,510	15	3				5		3	
St. Joseph, Mo.	77,403	23					1		2	1
Schenectady, N. Y.	72,826	20	1		3		9	2	7	2
South Bend, Ind.	53,684	16			1		2			
Springfield, Ill.	51,678	17	2				7			3
Trenton, N. J.	96,815	50	2	2			15		3	4
Wilkes-Barre, Pa.	67,105	23	7	2	16		12		1	
From 25,000 to 50,000 inhabitants:										
Atlantic City, N. J.	46,150	8	3				1			
Auburn, N. Y.	34,668	9			4		8		1	1
Aurora, Ill.	29,807	7	1				6			1
Austin, Tex.	29,860	13					1			
Binghamton, N. Y.	48,443	21			27		3		2	1
Brookline, Mass.	27,792	11	2		6					1
Chelsea, Mass.	32,452	18	2		3		8		3	1
Chicopee, Mass.	25,401	9	2	1			1			1
Danville, Ill.	27,871	8	1		2					2
East Orange, N. J.	34,371		4		55				4	
Elmira, N. Y.	37,176	10					1		1	
Everett, Mass.	33,484	8	4	1	5	1	9		3	1
Fitchburg, Mass.	37,826	8	4		2				2	1
Haverhill, Mass.	44,115				1		3		3	
Kalamazoo, Mich.	39,437	11	1				4		2	1
Knoxville, Tenn.	36,346				5					
La Crosse, Wis.	30,417	10	1	1						3
Lancaster, Pa.	47,227		1				3		2	
Lexington, Ky.	35,099	22			4		2		4	1
Little Rock, Ark.	45,941		2		38				1	
Lynchburg, Va.	29,494	9	2				2		1	1
Malden, Mass.	44,404	13			2		10		2	
McKeesport, Pa.	42,694	9	2		1		5			
Newcastle, Pa.	36,280						3			
Newport, Ky.	30,309	10	2				1		2	2
Newport, R. I.	27,149	7	1				1			
Newton, Mass.	39,806	20	8	2			1			1
Niagara Falls, N. Y.	30,445	15	5				2		1	1
Orange, N. J.	29,630	12	2		24		1		1	1
Pasadena, Cal.	30,291	6							3	1
Pittsfield, Mass.	32,121	27	2		3		1		2	
Portsmouth, Va.	33,190	10	2		1		2			
Racine, Wis.	38,002	10	1		1		3			
Roanoke, Va.	34,874	12	1		17		1			
Sacramento, Cal.	44,696	24	1		2		2			1
South Omaha, Nebr.	26,259	5					2			
Superior, Wis.	40,384	8	2				14			1
Taunton, Mass.	34,259	14			1		6		1	1
Waltham, Mass.	27,834	8					6	1		
West Hoboken, N. J.	35,403		2				3		4	
Wheeling, W. Va.	41,641	12	6							1
York, Pa.	44,750		3							
Zanesville, Ohio.	28,026						1			

SCARLET FEVER, MEASLES, DIPHTHERIA, AND TUBERCULOSIS—Contd.

City Reports for Week Ended Jan. 31, 1914—Continued.

Cities.	Popula- tion, United States census 1910.	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Less than 25,000 inhabitants:										
Alameda, Cal.	23,383	5					1			
Ann Arbor, Mich.	14,817	8	2		2				6	
Beaver Falls, Pa.	12,191	0	1				1			
Braddock, Pa.	19,357		1		13		2			
Cambridge, Ohio.	11,327	4								
Clinton, Mass.	13,075	6	1				3			2
Coffeyville, Kans.	12,687				12					
Columbus, Ind.	8,813				2		1			
Concord, N. H.	21,497	11	7				2			
Cumberland, Md.	21,839	9	1				4			
Dunkirk, N. Y.	17,221	2			4					
Galesburg, Ill.	22,089	4					1			
Harrison, N. J.	14,498	4	1		42		2		1	
Kearny, N. J.	18,659	7	5				3		1	
Kokomo, Ind.	17,010	3		1			1			
La Fayette, Ind.	20,081	10	5	1	1					
Marinette, Wis.	14,610	1	3		2					
Massillon, Ohio.	13,879	1			1					
Medford, Mass.	23,150	6			2		4			
Melrose, Mass.	15,715	6			1		1			
Moline, Ill.	24,199	2	2							
Montclair, N. J.	21,550	8			13		1			1
Morristown, N. J.	12,507	5			1					
Muncie, Ind.	24,005	6	4		1		7			
Muscatine, Iowa.	16,178	1							1	1
Nanticoke, Pa.	18,877	6	1				1			
Newburyport, Mass.	14,949	7	3						1	
North Adams, Mass.	22,019	8								
Northampton, Mass.	19,431	5			3				1	
Palmer, Mass.	8,610	1								
Plainfield, N. J.	20,550	5	1				1		1	
Portsmouth, N. H.	11,269		1				1			
Pottstown, Pa.	15,599	2			2					
Rutland, Vt.	13,546	2	1				1			
Saratoga Springs, N. Y.	12,693	4								
South Bethlehem, Pa.	19,973	6			4		1	1	1	1
Steelton, Pa.	14,246	4			2				1	2
Wilkinsburg, Pa.	18,924	8					15	2		
Woburn, Mass.	15,308	7								

IN INSULAR POSSESSIONS.

HAWAII.

Examination of Rats and Mongoose.

Rats and mongoose have been examined in Hawaii for plague infection as follows: Honolulu, week ended January 17, 1914, 401; week ended January 24, 1914, 365. Hilo, week ended January 3, 1914, 1,948; week ended January 10, 1914, 2,895; week ended January 17, 1914, 2,817. No plague-infected animal was found.

PHILIPPINE ISLANDS.

Cholera—Manila.

During the week ended January 3, 1914, 4 cases of cholera with 2 deaths were notified at Manila.

PORTO RICO.

Examination of Rodents and Mongoose.

During the three weeks ended January 31, 1914, rodents and mongoose were examined in Porto Rico for plague infection as follows: Rats, 1,972; mice, 795; mongoose, 9. No plague-infected animal was found.

FOREIGN REPORTS.

AUSTRIA-HUNGARY.

Hungary Declared Free from Cholera.

Hungary was declared free from cholera December 29, 1913.

CHINA.

Cholera—Plague—Plague Rats—Hongkong.

During the three weeks ended January 3, 1914, cholera and plague were notified in Hongkong as follows: Cholera, 1 case; plague, 15 cases, with 15 deaths.

During the same period there were examined at Hongkong for plague infection 6,739 rats, of which number 4 were found to be plague infected.

Smallpox—Amoy—Ting-Chow.

On January 5, 1914, smallpox was reported present at Amoy. On the same date an epidemic of hemorrhagic smallpox was reported at Ting-Chow, an interior city situated 130 miles from Amoy.

ECUADOR.

Plague—Yellow Fever.

Plague and yellow fever have been notified in Ecuador as follows:

MONTH OF DECEMBER, 1913.

Plague.—Guayaquil and vicinity (Babahoyo, Duran, Milagro, Naranjito) 159 cases with 75 deaths; port of Manta, 8 cases.

Yellow fever.—Guayaquil and vicinity (Milagro and Naranjito) 7 cases with 4 deaths.

ITALY.

Quarantine Against Moulmein.

Vessels arriving at Italian ports from Moulmein, British India, were made subject, January 27, 1914, to the measures prescribed against plague.

JAVA.

Batavia and Tandjong Priok Free from Cholera.

The ports of Batavia and Tandjong Priok were declared January 2, 1914, to be free from cholera.

PERU.

Status of Plague.

DEC. 1, 1913-JAN. 18, 1914.

Places.	New cases.	Remain- ing Jan. 18.	Places.	New cases.	Remain- ing Jan. 18.
Casma.....	(1)	.....	Mollendo.....	6	1
Catacaos.....	10	5	Monsefu.....	2	.....
Chiclayo.....	41	13	Nepena.....	(1)	.....
Ferrenaje.....	13	4	Pisco.....	2	.....
Guadalupe.....	(1)	.....	Plura.....	9	.....
Lima (city).....	28	12	San Pedro.....	28	6
Lima (country).....	6	2	Trujillo.....	41	18

¹ Present.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

Reports Received During Week Ended Feb. 20, 1914.

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay.....	Dec. 21-27.....	1	2	
Calcutta.....	Dec. 28-Jan. 3.....	.....	31	
Philippine Islands:				
Manila.....	Dec. 27-Jan. 3.....	4	2	
Turkey in Asia:				
Smyrna.....	Dec. 16-Jan. 8.....	11	4	Including previous report.
Turkey in Europe:				
Dardanelles.....	Jan. 9-20.....	10	9	

YELLOW FEVER.

Brazil:				
Bahia.....	Jan. 11-24.....	1	3	
Ecuador:				
Guayaquil.....	Dec. 1-31.....	4	3	
Milagro.....	.....do.....	1	.....
Naranjito.....	.....do.....	2	1	

PLAGUE.

Brazil:				
Bahia.....	Jan. 11-24.....	7	8	
Chile:				
Iquique.....	Jan. 4-10.....	1	1	
China:				
Hongkong.....	.....do.....	7	5	
Ecuador:				
Ecuador.....	Dec. 1-31.....	1	.....
Guayaquil.....	.....do.....	156	74	
Manta.....	.....do.....	8	.....
Milagro.....	.....do.....	1	1	
Naranjito.....	.....do.....	1	.....
India.....				Total Nov. 30-Jan. 3: Cases, 28,480; deaths, 21,000.
Bombay.....	Dec. 21-Jan. 3.....	5	3	
Calcutta.....	Dec. 27-Jan. 3.....	.....	1	
Indo-China.....				Total Jan. 1-Nov. 20: Cases, 3,665; deaths, 3,465.
Saigon.....	Dec. 31-Jan. 5.....	6	.....
Peru:				
Ancachs—				
Casma.....	Dec. 1-Jan. 18.....	.....	.....	Present.
Nepena.....	.....do.....	.....	.....	Do.
Arequipa—				
Mollendo.....	.....do.....	6	.....

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received During Week Ended Feb. 20, 1914—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Peru—Continued.				
Lambayeque—				
Chiclayo.....	Dec. 1-Jan. 18.....	41	.....
Ferrenaje.....	.....do.....	13	.....
Guadalupe.....	.....do.....	.....	.....	Present.
Libertad—				
San Pedro.....	.....do.....	28	.....
Trujillo.....	.....do.....	41	.....	Jan. 21: 21 cases in the lazaretto.
Lima.....	.....do.....	6	.....
Lima.....	.....do.....	28	.....
Pisco.....	.....do.....	2	.....
Monsefu.....	.....do.....	2	.....
Piura—				
Catacaos.....	.....do.....	10	.....
Piura.....	.....do.....	9	.....

SMALLPOX.

Arabia:				
Matarah.....	Jan. 10.....	.....	.....	Present.
Austria-Hungary:				
Lower Austria—				
Vienna.....	Jan. 4-10.....	1	.....
Tyrol and Vorarlberg.....	Dec. 21-Jan. 10.....	4	.....
Upper Austria.....	Dec. 21-Jan. 3.....	16	.....
Canada:				
Quebec.....	Jan. 24-31.....	1	.....
China:				
Amoy.....	Jan. 10.....	.....	.....	Present.
Antung.....	Jan. 4-11.....	1	.....
Dairen.....	Dec. 21-27.....	2	.....
Hankow.....	Dec. 29-Jan. 3.....	2	.....
Shanghai.....	Jan. 4-11.....	1	.....
Ting-Chow.....	Jan. 5.....	.....	.....	Epidemic. 130 miles from Amoy.
Dutch East Indies:				
Java—				
Batavia.....	Dec. 21-27.....	18	8	
Great Britain:				
London.....	Jan. 18-24.....	1	.....
India:				
Bombay.....	Dec. 21-Jan. 3.....	11	7	
Karachi.....	Jan. 4-10.....	15	10	
Mexico:				
Aguascalientes.....	Jan. 27-Feb. 1.....	.....	6	
Tampico.....	Jan. 14-20.....	50	16	
Mauritius.....	Oct. 2-25.....	60	4	
Peru:				
Callao.....	Jan. 26.....	.....	.....	Still epidemic.
Lima.....	.....do.....	.....	.....	Do.
Portugal:				
Lisbon.....	Jan. 11-24.....	4	.....
Russia:				
Moscow.....	Dec. 28-Jan. 10.....	2	.....
Switzerland:				
Basel.....	Jan. 4-17.....	24	.....
Turkey in Asia:				
Trebizond.....	Jan. 11-24.....	.....	.....	Present.
Turkey in Europe:				
Constantinople.....	Jan. 18-24.....	.....	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 27, 1913, to Feb. 13, 1914.

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Bosnia-Herzegovina—				
Brod.....	Nov. 13-18.....	2	.....
Kostjica.....	do.....	1	.....
Novigrad.....	Oct. 26-Nov. 5.....	1	.....
Sjekocac.....	Nov. 6.....	1	.....
Travnik, district.....	Dec. 10-16.....	6	.....
Vranduk.....	Nov. 20.....	1	.....
Zenica.....	Oct. 26-Nov. 19.....	9	2	
Croatia-Slavonia—				
Pozenga.....	Nov. 18-Dec. 1.....	2	.....
Syrmien—				
Adasevel.....	do.....	6	2	
Semlin.....	do.....	1	1	
Vitrovia.....	do.....	.....	.....
Dobrovic.....	do.....	2	2	
Hungary				Total, Sept. 1-Dec. 29: Cases 729, deaths 372; Dec. 29, free.
Bacs-Bodrog, district.....	Nov. 9-Dec. 29.....	52	31	
Jasz-Nagy-Kun-Szolnok—				
Szolnok.....	Nov. 9-15.....	2	2	
Maramaros.....	Nov. 30-Dec. 6.....	1	1	
Pest Pilts—				
Soroksar.....	Nov. 9-22.....	2	1	
Szabolcs—				
Nyiregyhaza.....	Nov. 9-15.....	1	1	
Temes—				
Varasiget.....	do.....	.....	1	
Torontal.....	Nov. 9-Dec. 13.....	27	19	
Ung—				
Jasza.....	Nov. 9-15.....	1	1	
Ceylon:				
Colombo.....	Nov. 9-Jan. 3.....	31	17	
China:				
Hongkong.....	Nov. 9-Dec. 20.....	4	.....
Dutch East Indies:				
Java—				
Batavia and Tanjong Priok.....	Nov. 9-Dec. 27.....	45	34	
Samarang.....	Nov. 30-Dec. 20.....	30	15	
India:				
Bombay.....	Nov. 10-Dec. 20.....	13	4	
Calcutta.....	Nov. 9-Dec. 27.....	.....	356	
Madras.....	Nov. 16-Dec. 20.....	3	2	
Rangoon.....	Nov. 1-30.....	3	2	
Philippine Islands:				
Manila.....	Nov. 9-Dec. 27.....	40	32	Total, Aug. 23-Dec. 27: Cases 157, deaths 108. Third quarter, 1913: Cases 14, deaths 6.
Provinces.....				Total, Aug. 23-Dec. 27: Cases 148, deaths 94.
Bulacan—				
Bulacan.....	Dec. 14-20.....	.....	.....	Present in vicinity.
Meycauayan.....	do.....	.....	.....	Present.
Cadiz.....				Total, Dec. 17-23: Cases 26, deaths, 18.
Banca.....	Dec. 17-20.....	.....	.....	Present.
Calivo.....	do.....	.....	.....	One death daily.
New Washington.....	do.....	.....	.....	Present.
Cavite—				
Santa Cruz.....	Nov. 13-19.....	.....	.....	Do.
Cebu—				
Cebu.....	do.....	.....	.....	Do.
Opon.....	Nov. 19.....	1	.....	On Mactan Island.
Pampanga.....	Dec. 27.....	.....	.....	Present in Guagua, Macabebe, San Fernando, and other places.
Pangasinan.....	Dec. 19-29.....	.....	.....	Present in Dagupan, Lingayen, San Carlos, and Urdaneta.
Rizal—				
Las Pinas.....	do.....	1	.....	Present.
Palig.....	Nov. 19.....	.....	.....	Total, Nov. 14 to Dec. 7: Cases 18, deaths 15.
Roumania.....				

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 27, 1913, to Feb. 13, 1914—Continued.****CHOLERA—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Russia:				
Bessarabia—				
Ismail.....	Oct. 26-Nov. 8....	6	1	
Ekaterinoslav.....	do.....	1		
Kherson.....	do.....	6	9	
Taurida—				
Dneiper district.....	do.....	1	2	
Servia.....				Nov. 10-24, 8 cases with 2 deaths in the districts Podrigne and Pojarevat.
Siam:				
Bangkok.....	Nov. 2-29.....		38	
Straits Settlements:				
Singapore.....	Nov. 2-Dec. 20....	18	16	
Turkey in Asia:				
Aivall.....	Jan. 10-23.....	9	6	
Beirut.....	Dec. 23.....	2	1	From among troops on the s. s. Bahr Amer from Rodosto.
Smyrna.....	Dec. 16-Jan. 5....	3		
Trebizond.....	Dec. 9-Jan. 17....	21	14	Dec. 9-16, 6 cases among troops from s. s. Guldjemal. Jan. 17, 1 case in the city.
Turkey in Europe:				
Constantinople.....	Nov. 25-Jan. 25....	137	52	Total, Aug. 2, 1913, to Jan. 25, 1914: Cases 211, deaths 92.
Gallipoli.....	Jan. 1-3.....	2	2	
Pera.....	Jan. 3-10.....	5		
Rodosto.....	Dec. 21-Jan. 9....	22		

YELLOW FEVER.

Brazil:				
Bahia.....	Nov. 23-Dec. 20....	5	4	
Ceara.....	Nov. 1-30.....		2	
Ecuador:				
Guayaquil.....	do.....	5	3	
Milagro.....	do.....	1	1	
Naranjito.....	do.....	1	1	
Mexico:				
Merida.....	Dec. 10-11.....	1	1	From Campeche.
Do.....	Jan. 4-10.....	1	1	Do.
Southern Nigeria:				
Lagos.....	Oct. 20-28.....	3	1	Among Europeans from a vessel. Including previous report.
Togo:				
Lome.....	Sept. 12.....	1		
Trinidad:				
Brighton.....	Dec. 30.....	1		Total Nov. 22-Dec. 30: Cases, 10; deaths 3, including previous reports.

PLAGUE.

Australia:				
Thursday Island Quarantine station.	May 21.....	5		Pestis minor from s. s. Taynan from Hongkong to Townville.
Azores:				
Terceira—				
Angra-Heroismo.....	Dec. 21.....		1	
Brazil:				
Bahia.....	Nov. 23-Jan. 10....	19	7	
Rio de Janeiro.....	Nov. 16-22.....	1	1	
British East Africa:				
Kisumu.....	Sept. 12-Oct. 13....	2	2	
Mombasa.....	Sept. 12-Dec. 15....	31	16	
Nairobi.....	Sept. 12-Nov. 15....	3	3	
Chile:				
Iquique.....	Nov. 9-Jan. 4.....	15	6	
China:				
Hongkong.....	Nov. 2-Jan. 3.....	34	32	
Shanghai.....	Oct. 1-7.....	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 27, 1913, to Feb. 13, 1914—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Dutch East Indies:				
Provinces—				
Kediri.....	Nov. 1-30.....	307	268	
Madoen.....	do.....	89	81	
Malang.....	do.....	820	770	
Surabaya.....	do.....	60	64	
Ecuador:				
Babahoyo.....	Nov. 1-30.....	1		
Guayaquil.....	do.....	193	83	
Milagro.....	do.....	1		
Yaguachi.....	do.....	2	2	
Egypt.....				Jan. 1-Dec. 24, 1913: Cases, 654; deaths, 304. Jan. 1-15, Cases, 6; deaths, 4.
Provinces—				
Assiout.....	Jan. 5.....	1	1	
Assouan.....	Dec. 10.....	1		
Do.....	Jan. 5.....	1	1	
Garbieh.....	Dec. 11.....	1		
Do.....	Jan. 15.....	4	2	
Minieh.....	Dec. 9-24.....	3	1	
Do.....	Jan. 8.....	1	1	
India.....				Total Jan. 1-Nov. 29, 1913: Cases, 209,710; deaths, 176,966.
Bombay.....	Nov. 9-Dec. 20.....	20	16	
Calcutta.....	Nov. 2-Dec. 13.....		11	
Karachi.....	Nov. 9-Jan. 3.....	98	95	
Madras.....	Nov. 16-Dec. 20.....	4	2	
Rangoon.....	Oct. 26-Nov. 30.....	26	25	
Indo-China.....				Total Jan. 1-Nov. 20: Cases, 3,665; deaths, 3,465.
Saigon.....	Nov. 11-Dec. 29.....	9		
Japan.....				Total Jan. 1-Nov. 30: Cases, 26; deaths, 20.
Kobe.....	Dec. 1-7.....	1		
Yokohama.....	Jan. 4-10.....	1		Total Sept. 19-Jan. 10: Cases, 22; deaths, 17.
Mauritius.....	Oct. 26-Dec. 11.....	60	43	Total Jan. 1-Nov. 27: Cases, 273; deaths, 163.
Morocco:				
Casablanca.....	Jan. 7.....	1	1	
El-Araish (Larache).....	Sept. 17.....	1		Among the military.
New Caledonia:				
Bourail.....	Sept. 1-Oct. 14.....	8	2	In a school of the tribe of the Azaren.
Peru:				
Trujillo.....				Jan. 9, 13 cases in the lazaretto.
Philippine Islands:				
Manila.....	Nov. 23-29.....	1	1	Third quarter, 1913: Cases, 2; deaths, 1.
Russia:				
Ural, territory.....				Total Oct. 20-Nov. 10: Cases, 212; deaths, 170; and 2 fatal cases from Issum Tube.
Djakisabevsk district—				
Djumarta.....	Nov. 9-10.....	5	1	
Djantayu.....	Nov. 8-10.....	2	2	
Kizilu.....	Nov. 8.....	1	1	
Fourteenth village.....	Nov. 7-9.....	6		
Sarbas.....	Nov. 8-10.....	13	7	
Kaziljar district.....	Nov. 5-10.....	39	24	In Assaukurt, Baichurek, Biskuduk, and Djamankuduk.
Lbistchensky district—				
Issum Tube.....	Oct. 20-Nov. 10.....	138	127	
Kaimikov.....	Nov. 4-10.....	6	6	
Siam:				
Bangkok.....	Nov. 2-29.....		1	
Turkey in Asia:				
Beirut.....	Dec. 10-23.....	2	2	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 27, 1913, to Feb. 13, 1914—Continued.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Departments—				
Algiers.....	Sept. 1-Oct. 31.....	2		
Constantine.....	Oct. 1-31.....	9		
Oran.....	Sept. 1-Oct. 31.....	84		
Arabia:				
Aden.....	Nov. 25-Dec. 15.....	5	4	
Maskat.....	Nov. 30-Dec. 6.....	10		Dec. 20, present.
Matarah.....	Dec. 23-26.....	9		Nov. 30, present.
Argentina:				
Buenos Aires.....	Nov. 1-30.....		1	
Australia:				
New South Wales.....				Total, July 1-Dec. 20: Cases, 1,058.
Sydney.....	Dec. 6-20.....	8		July 1-Dec. 20: Cases, 1,017.
Austria-Hungary:				
Tyrol.....	Nov. 23-29.....	1		
Upper Austria.....	Dec. 14-20.....	2		
Brazil:				
Bahia.....	Nov. 23-Jan. 3.....	16		
Para.....	Dec. 1-Jan. 10.....	23	26	
Pernambuco.....	Nov. 1-Dec. 15.....		49	
Rio de Janeiro.....	Nov. 9-Jan. 3.....	167	28	
Canada:				
Ontario—				
Hamilton.....	Jan. 1-31.....	9		
Ottawa.....	Dec. 7-20.....	3		
Toronto.....	Dec. 7-Jan. 10.....	3		
Quebec—				
Montreal.....	Dec. 7-Jan. 31.....	35		
Ottawa.....	Dec. 28-Jan. 31.....	9		
Ceylon:				
Colombo.....	Nov. 30-Dec. 6.....	1		
China:				
Amoy.....	Dec. 14-27.....			Present.
Dairen.....	Dec. 7-13.....	2	1	
Hankow.....	Nov. 2-Dec. 20.....	7	1	
Hongkong.....	Dec. 14-20.....	1		
Shanghai.....	Dec. 8-Jan. 4.....	4		
Tientsin.....	Nov. 9-15.....		1	
Tong An.....	Dec. 27.....			Present, 20 miles from Amoy.
Dutch East Indies:				
Java.....				Dec. 13, 16 cases with 6 deaths in the interior.
Batavia.....	Nov. 9-Dec. 13.....	33	5	
Surabaya.....	Oct. 28-Nov. 8.....	3		
Egypt:				
Alexandria.....	Nov. 26-Jan. 14.....	12	6	
Cairo.....	Nov. 19-Jan. 7.....	79	28	
Port Said.....	Dec. 3-9.....		1	
France:				
Marseille.....	Nov. 1-Dec. 31.....		72	
Nice.....	Nov. 1-30.....	1		
Paris.....	Nov. 23-Dec. 27.....	11		
St. Etienne.....	Nov. 16-30.....	8	3	
Germany.....				Dec. 7-Jan. 11: Cases, 6.
Hamburg.....	Dec. 11-25.....	4		
Gibraltar.....	Dec. 1-28.....	3		
Great Britain:				
Nottingham.....	Dec. 21-27.....	28		
Greece:				
Achaia and Elis, province..	Jan. 29.....			Present.
India:				
Bombay.....	Nov. 23-Dec. 13.....	7	3	
Calcutta.....	Nov. 2-Dec. 27.....		12	
Karachi.....	Nov. 2-Dec. 27.....	4	1	
Madras.....	Nov. 2-Dec. 13.....	11	4	
Indo-China:				
Saigon.....	Nov. 11-24.....	1	1	
Italy:				
Leghorn.....	Dec. 21-27.....	1		
Turin.....	Dec. 22-28.....	1		
Japan.....				Total Jan. 1-Nov. 30: Cases, 106, deaths, 39, exclusive of Taiwan.
Tokyo.....	Nov. 1-30.....	1		
Yokohama.....	Jan. 6-12.....	1	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 27, 1913, to Feb. 13, 1914—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Acapulco.....	Dec. 6.....	.....	1	
Agua Calientes.....	Dec. 1-Jan. 25.....	.....	30	
Chihuahua.....	Dec. 29-Jan. 23.....	.....	9	
Guadalajara.....	Jan. 11-24.....	12	6	
Imuris.....	Dec. 29-Jan. 4.....	5	.....
Llano.....	Jan. 17.....	8	.....
Mexico.....	Oct. 26-Nov. 15.....	15	10	
Monterey.....	Nov. 17-Jan. 4.....	2	4	
San Luis Potosi.....	Nov. 2-29.....	2	.....
Tampico.....	Dec. 24-Jan. 10.....	50	5	
Vera Cruz.....	Dec. 6-Jan. 10.....	8	2	
New Zealand				Apr. 8, 1913, to Jan. 7, 1914: Cases, 2,000 including report, p. 2863, vol. 28.
Norway:				
Trondhjem.....	Nov. 1-Dec. 31.....	10	.....
Philippine Islands:				
Manila.....				Third quarter 1913: Cases, 15.
Portugal:				
Lisbon.....	Nov. 16-Dec. 27.....	7	.....
Russia:				
Moscow.....	Dec. 14-27.....	2	2	
Odessa.....	Nov. 16-Jan. 3.....	2	2	
St. Petersburg.....	Nov. 23-Dec. 27.....	35	5	
Warsaw.....	Oct. 5-18.....	7	4	
Servia:				
Belgrade.....	Nov. 7-Jan. 5.....	13	5	
Spain:				
Almeria.....	Nov. 1-Dec. 31.....	.....	7	
Barcelona.....	Nov. 30-Jan. 17.....	.....	31	
Madrid.....	Nov. 1-Dec. 31.....	.....	53	
Seville.....	Nov. 1-30.....	.....	1	
Valencia.....	Dec. 1-27.....	3	.....
Straits Settlements:				
Penang.....	Nov. 2-Dec. 6.....	13	1	
Singapore.....	Nov. 2-22.....	2	.....
Switzerland:				
Canton—				
Basel.....	Nov. 23-Dec. 13.....	21	.....
Genoa.....	Nov. 23-29.....	3	1	
Turkey in Asia:				
Adana.....	Jan. 10.....	1	.....	Dec. 28, epidemic.
Beirut.....	Nov. 23-Jan. 17.....	192	85	
Jaffa.....	Dec. 6-27.....	12	.....
Mersina.....	Jan. 4-10.....	1	.....
Smyrna.....	Nov. 16-Dec. 13.....	.....	85	
Tarsus.....	Dec. 28-Jan. 10.....	.....	.....	Still present.
Turkey in Europe:				
Constantinople.....	Nov. 20-Jan. 17.....	.....	10	
Saloniki.....	Dec. 1-Jan. 17.....	.....	59	

SANITARY LEGISLATION.

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

SOUTH DAKOTA.

State Board of Health—Organization, Powers, and Duties—Registration of Physicians. (Chap. 109, Act Mar. 3, 1913.)

SECTION 1. There is hereby created a board of public health and medical examiners, the members of which are to be appointed by the governor, all of whom shall be resident physicians of the State, in good standing, and shall have resided and practiced within this State not less than five years preceding their appointment. The school known as the regular homeopathic shall at all times be represented upon such board.

SEC. 2. Immediately after the taking effect of this act the governor shall appoint five skilled and capable physicians who shall constitute said board, two of whom shall be appointed for the period ending July 1, 1914, and three for the period ending July 1, 1915, and thereafter in each year, on or about the first day of July, the governor shall appoint members of said board to succeed the members whose terms of office then expire, and such appointment shall in each instance be for a period of two years.

SEC. 3. The governor shall in his commission of appointment designate which member of said board shall be superintendent thereof. At the first meeting after their appointment the members thereof shall organize said board by electing a president and vice president. The superintendent of said board shall be ex officio secretary.

SEC. 4. The said board shall hold quarterly meetings in each year, two of which shall be at the State capital, and other meetings at such times and places as the superintendent of said board shall designate, and shall have power as follows:

(1) To exercise general supervision over all health officers and boards, take cognizance of the interest of health and life among the people, investigate sanitary conditions, learn the cause and source of disease and epidemics, observe the effect upon human health of localities and employments, and gather and diffuse proper information upon all subjects to which its duties relate; to gather, collate, and publish medical and vital statistics of general value, and advise all State officials and boards in hygiene and medical matters, especially those involved in the proper location, construction, sewerage, and administration of prisons, hospitals, asylums, and other public institutions.

(2) To adopt, alter, and enforce reasonable regulations of permanent application throughout the whole or any portion of the State, or for specified periods in parts thereof, for the preservation of the public health. Upon the approval of the attorney general, and the due publication thereof, such regulations shall have the force of law, except in so far as they may conflict with a statute or with the charter or ordinances of a city of the first class upon the same subject, and in and by the same the board may control, by requiring the taking out of licenses and permits, or by other appropriate means, any of the following matters:

(a) The manufacture into articles of commerce, other than food, of diseased, tainted, or decayed animal or vegetable matter.

- (b) The business of scavenging and the disposal of sewage.
- (c) The location of mortuaries and cemeteries and the removal and burial of the dead.
- (d) The management of lying-in houses and boarding places for infants and the treatment of infants therein.
- (e) The pollution of streams and other waters and the distribution of water by private persons for drinking or domestic use.
- (f) The construction and equipment, in respect to sanitary conditions, of schools, hospitals, almshouses, prisons, and other public institutions.
- (g) The treatment in hospitals and elsewhere of persons suffering from communicable diseases, the disinfection and quarantine of persons and places in case of such disease, and the reporting of sickness and deaths therefrom.
- (h) The accumulation of filthy and unwholesome matter to the injury of the public health, and the removal thereof.
- (i) To require the superintendent of vital statistics to furnish all information that he may have regarding vital statistics.
- (j) The supervision of slaughterhouses.
- (k) To license and regulate the practice of medicine and surgery within the State of South Dakota, and to make all rules and regulations which may be necessary or expedient to that end.

SEC. 5. *Publication—Penalties.*—Three weeks published notice of such regulations, if of general application throughout the State, shall be given at the seat of government; if of local application only, as near such locality as practicable; which publication shall be made in an official newspaper of the county where such publication is made. Special rules applicable to particular cases shall be sufficiently noticed when posted. Every person violating any such regulation, or any lawful direction of a board of health officer, shall be guilty of a misdemeanor. Fines collected shall be paid into the State treasury, and credited to the perpetual school fund.

SEC. 6. *Interstate carriers.*—Wherever necessary the board may establish and enforce a system of quarantine against the introduction into the State of any plague or other communicable disease by common carriers doing business across its borders. Its members, officers, and agents may board any conveyance used by such carriers, to inspect the same, and if it be found infected, may detain such conveyance and isolate and quarantine any or all persons found thereon, with their luggage, until all danger of communication of disease therefrom is removed.

SEC. 7. *Other remedies reserved.*—Nothing herein contained shall curtail the powers of the courts to administer the usual legal and equitable remedies in case of nuisances or of improper interference with private rights.

SEC. 8. The superintendent of said board shall devote his time and attention to the performance of his duties, and shall receive an annual salary of \$2,000, payable in monthly installments, and his actual and necessary expenses. The other members of said board shall receive as their compensation the sum of \$5 per day while actually engaged in the performance of their duties, and in addition thereto 5 cents per mile for each mile actually and necessarily traveled, and their actual and necessary expenses.

SEC. 9. The accounts of the members of said board for expenses and per diem shall be audited by the superintendent thereof and paid out of the State treasury on the warrant of the auditor upon properly certified vouchers.

SEC. 10. The said board shall keep a correct record of all its proceedings, and the same shall be open for public inspection. It shall also keep a register of all applicants for a license to practice as a physician and surgeon, or either, within this State, together with the age of such applicant, the time spent in preparation in the study of medicine, the location and name of all institutions in which said study has been pursued, the location and name of all institutions granting to applicant any degrees or certificates

of lectures in medicine or surgery, and such record shall show whether said applicant was rejected or licensed under this act, and said record or a certified copy of the entry thereof shall be prima facie evidence of all matters therein stated.

SEC. 11. Any person desiring to engage in the practice of medicine or surgery or obstetrics in any of their branches in this State shall make application to said board for a license to practice medicine, surgery, or obstetrics in the State of South Dakota. Such license shall be granted to such applicants who shall give satisfactory proof of being at least 21 years of age, of good moral character, on compliance with the following conditions: The applicants shall pass an examination upon the following subjects: Anatomy, physiology, chemistry, pathology, therapeutics, practice of medicine, surgery, obstetrics, gynecology, disease of the eye and ear, nose and throat, bacteriology, medical jurisprudence, and such other branches as the board may deem advisable; and in addition thereto shall present evidence of having attended four full courses of lectures of at least 26 weeks each in a legally organized and reputable medical college recognized by said board of public health and medical examiners, no two courses being in the same year, and of having received a diploma from a legally organized and reputable medical college which shall be in good standing, to be determined by the board, and said diploma must be submitted to the board for inspection and verification: *Provided*, That the four courses of lectures of six months each shall not apply to applicants graduating prior to 1898.

SEC. 12. The examination required by the preceding section shall be conducted as follows:

(1) The applicant before taking the examination shall pay to the superintendent of the board an examination fee of \$20.

(2) The examination shall be in writing, or oral, or both, as the board may determine.

(3) The questions on all subjects, except therapeutics and practice of medicine, shall be such as are answered alike by all schools of medicine. And no license shall be refused any applicant because of his adherence to any particular school of medicine. Each applicant shall be required to attain an average percentage of at least 75 per cent of correct answers. Any applicant failing on such examination shall be eligible to second examination at any regular meeting of the board or such times as the board may designate without the payment of an additional fee.

SEC. 13. To each applicant successfully passing said examination and fulfilling all other requirements of this act, the said board shall grant a license to practice medicine and surgery and obstetrics in all branches in the State of South Dakota. Such license shall be granted only by the consent of a majority of said board. All examination papers and questions submitted on examination shall be kept for reference and inspection for a period of not less than three years.

SEC. 14. The said board may, in its discretion, accept a license upon the payment of the license fee and without examination, any license which shall have been issued to the applicant by the examining board of the District of Columbia, or any State or Territory of the United States, if the legal requirements of such examining board at the time of issuing such license or certificate shall be in no degree or particular less than those of the State of South Dakota at the time when such license is presented for registration: *Provided*, That the provisions of this section shall apply to such certificates or licenses issued by examining boards as accept and register licenses or certificates issued by the board of public health and medical examiners of this State. Each applicant upon making application under the provisions of this act shall pay to the superintendent of said board a license fee of \$20.

SEC. 15. The board shall have the power and authority to refuse to grant a license under this act for unprofessional, immoral, or dishonorable conduct on the part of the applicant.

SEC. 16. The said board shall have the power and authority to revoke the license of any physician or surgeon heretofore or hereafter granted upon complaint made under

oath by a reputable person if it shall satisfactorily appear to the board that such physician or surgeon has been guilty of unprofessional, immoral, or dishonorable conduct or has been convicted of a felony, or if such physician or surgeon publicly professes or claims to cure or treat disease, injury, or deformity in such a manner as to deceive the public, or shall be grossly incompetent: *Provided, however,* That no license shall be revoked except after a hearing before the board upon notice of not less than 10 days, with a copy of the complaint having been duly served upon the adverse party, and then only upon due proof of the facts alleged in the complaint.

SEC. 17. The words, "unprofessional or dishonorable conduct," as used in this act, shall be construed to include—

First. Producing or aiding or abetting a criminal abortion.

Second. The employing of what is known as cappers or steerers.

Third. The obtaining of any fee on the assurance that a manifestly incurable disease can be permanently cured.

Fourth. Willfully betraying a professional secret.

Fifth. All advertising of medical business in which untruthful or improbable statements are made or which are calculated to mislead or deceive the public.

Sixth. All advertising of any medicine, or any means whereby the monthly periods of women can be regulated or the menses reestablished if suppressed.

Seventh. Conviction of any offense involving moral turpitude.

Eighth. Habitual intemperance.

SEC. 18. Any person receiving a license to practice as hereby provided shall record the same in the office of the register of deeds of the county where he resides and is engaged in practice, and the said register of deeds shall, on or before the 1st day of January and July in each year, furnish to the superintendent of said board a list of all licenses recorded. All moneys received by said board shall be paid into the State treasury and shall be credited to the general fund of the State, and a receipt in duplicate be filed with the superintendent of said board in the office of the State auditor.

SEC. 19. *Itinerant physicians must procure itinerant licenses.*—Any physician practicing medicine, surgery, or obstetrics or professing or attempting to treat, cure, or heal diseases, ailments, or injuries by any medicine, appliance, or method who goes from place to place, or from house to house, or by circulars, letters, or advertisements solicits persons to accept treatment from himself or others, at places other than his office at the place of his permanent residence, is hereby declared to be an itinerant physician, and shall, in addition to the ordinary physician's license as in this act provided, procure an itinerant's license from the State board of public health and medical examiners, for which he shall pay the superintendent of the board the sum of \$1,000 per annum; upon the payment of said sum of \$1,000 the board shall issue to the applicant therefor a license to practice within the State as an itinerant physician for one year from the date thereof.

SEC. 20. *Penalty for practicing without a license.*—Any person practicing medicine, surgery, or obstetrics in any of their branches as an itinerant physician as in section 19 hereof defined, without having procured such itinerant license, shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than \$500 nor more than \$800 or imprisonment in the county jail not less than 30 nor more than 90 days, or by both such fine and imprisonment.

SEC. 21. *Unlawful to use title and prescribe, when.*—When a person shall append or prefix the letters "M. B." or "M. D.," or the title of "Dr." or "doctor," or "specialist," or any other sign or appellation in a medical sense, to his or her name, or shall profess publicly to be a physician or surgeon, or who shall recommend, prescribe, or direct for the use of any person any drug, medicine, apparatus, or other agency for the cure, relief, or palliation of any ailment or disease of the mind or body, or for the cure or relief of any wound, fracture, or bodily injury or deformity, after having received or with the intent of receiving therefor, either directly or indirectly, any

bonus, gift, or compensation, shall be regarded as practicing within the meaning of this act.

SEC. 22. The provisions of sections 11, 12, 13, 14, 15, 16, 17, 18, 21, and 25 of this act shall not apply to commissioned surgeons of United States Army, Navy, or Marine Hospital Service in the actual performance of their duties, nor to regularly licensed physicians or surgeons from outside this State in actual consultation with physicians of this State, nor to dentists or osteopaths in the legitimate practice of their profession, nor to Christian scientists as such, who do not practice medicine, surgery, or obstetrics by the use of any material remedies or agencies, nor to resident physicians and surgeons of this State regularly licensed and practicing in this State at the time of the taking effect of this act.

SEC. 23. Any person now practicing or who shall practice medicine, surgery, obstetrics, or any of the branches thereof, in the State of South Dakota, without having obtained a license as provided herein, and caused the same to be recorded as herein required, or any person who shall submit to the board of medical examiners any false, forged, or fraudulent diploma, or one of which he is not the lawful owner, or any false or forged affidavit of identification, for the purpose of obtaining from said board the license required by this act, or who shall file or attempt to file with the register of deeds of any county in this State any such license belonging to another, representing the same to be his own, or any such license issued to another having the names of the person to whom it was granted or issued erased therefrom and his own name, or the name of another, inserted in its place, or who shall falsely personate any one to whom such license has been granted, shall be deemed guilty of misdemeanor and upon conviction thereof shall be punished as follows: For the first offense, by a fine of not less than \$50 nor more than \$100, or by imprisonment in the county jail not to exceed 30 days, or both such fine and imprisonment. For the second offense, by a fine of \$300 and imprisonment in the county jail for 90 days. For the third and each subsequent offense, by a fine of \$500 and imprisonment in the county jail for 90 days: *Provided*, That the penalties set forth in this section shall not apply to the provisions nor modify the penalties set forth in sections 19 and 20 of this act.

SEC. 24. It shall be the duty of the state's attorney to prosecute any and all violations of this act committed in his county.

SEC. 25. Any person feeling aggrieved by any action of said board shall have the right to appeal to the circuit court of the county in which the person appealing resides. Said appeal shall be taken by serving upon the superintendent of said board a notice of appeal, stating the action of the board from which the appeal is taken, and, if an order, stating such order or so much and such part thereof from which the appeal is taken, and by filing with said superintendent a bond in the sum of \$500 conditioned for the payment of all costs of said appeal and all damages sustained by any person because of his failure to comply with the terms of said order if upon such appeal the same shall be held to be legal and valid. Upon the filing and approval of said bond the order appealed from shall be stayed pending the final determination of the controversy. Immediately upon the perfecting of said appeal it shall be the duty of the superintendent of said board to transmit to the clerk of the circuit court of said county the said notice of appeal and bond and a certified copy of all proceedings of said board in relation to the matter from which the appeal is taken, and said cause shall thereupon stand for trial at the first regular term of court in said county thereafter.

SEC. 26. The said board shall make to the governor a biennial report showing all of its proceedings and shall contain such recommendations as it shall deem expedient.

SEC. 27. Nothing in this act shall be so construed as to interfere with the powers and duties of the food and drug commissioner.

SEC. 28. Sections 238 and 245 [sic], both inclusive, of article 6 of chapter 4 of the Revised Political Code of 1903, and chapter 176 of the Session Laws of 1903, and chapter

136 of the Session Laws of 1905, and chapter 191 of the Session Laws of 1909, and all acts and parts of acts in conflict with the provisions of this act, are hereby repealed.

County Boards of Health—Powers and Duties—Health Officers. (Chap. 110, Act Mar. 3, 1913.)

SECTION 1. That sections 250, 251, 252, and 253 of the Political Code is [sic] hereby amended to read as follows:

SEC. 250. The several county boards of health shall have power within their respective counties, subject to the supervisory control of the State board of health, and the superintendent of the State board of health to—

1. Enforce any and all needful rules and regulations made by the State board of health for the prevention and cure, and to prevent the spread of any contagious or infectious disease among persons or domestic animals.

2. Establish quarantine and isolate any person affected with contagious or infectious disease.

3. Isolate, kill, or remove any animal affected with contagious or infectious disease.

4. Remove or cause to be removed any dead, decaying, or putrid body, or any decayed, putrid, or other substance that may endanger the health of persons or domestic animals.

5. Condemn and cause to be destroyed any impure or diseased article of food that may be offered for sale.

All expenses actually and necessarily paid and incurred by the county board of health in carrying out the provisions of this article shall be audited by such board and certified to the county commissioners of the county where such expenses are incurred and shall be paid the same as other county expenses.

SEC. 251. The superintendent of the county board of health shall have charge of and superintend, subject to the approval of the board of which he is a member, and the supervisory control of the State board of health, all the matters and things in subdivisions 1, 2, 3, 4, and 5 of section 250 within his county, and in case of immediate danger to the health of persons he may act as in his judgment he may deem proper without consultation with the county board of health, for the prevention of such danger, and shall immediately report such action to the president of the county board of health, and to the superintendent of the State board of health.

SEC. 252. The president of the county board of health shall receive no other compensation than that which is provided for. He shall receive 5 cents for every mile actually and necessarily traveled in the performance of his duties as a member of said board. The superintendent of the county board of health shall receive 20 cents per mile for every mile actually and necessarily traveled by the nearest route in the performance of his duties, which mileage shall be in lieu of all compensation of traveling expenses that said superintendent shall receive, and the superintendent, or the vice president of the county board of health if he performs the duties of the superintendent, shall receive such other sums as the board of county commissioners may allow: *Provided*, That for each investigation, visit, or examination necessarily made where an infectious, contagious, or communicable disease may exist or be reasonably suspected of existing, the superintendent, or the vice president of the county board of health if he performs the duties of the superintendent, shall also receive the sum of \$5 for each investigation, visit, or examination actually and necessarily made where but one person is examined in one building and \$1 for each additional person examined. The superintendent shall also receive the sum of 50 cents for each monthly report to the superintendent of the State board of health of the health conditions of the county, and he, or the vice president if he performs the duties of the superintendent, shall further receive such other sum or sums as he may pay or become liable to pay for medicine, chemicals, drugs, or appliances in carrying out and performing the various

duties imposed upon him under the provisions of this article, which, together with other expenses, shall be audited by the board of county commissioners and paid as other county expenses.

SEC. 253. All members, officers, and employees of the State and local boards of health shall have the right to enter any building, conveyance, or place where contagious, infection, filth, or other source or cause of preventable disease exists or is reasonably suspected to exist, and all county boards of health, and health officers shall make such investigation and reports, and obey such directions concerning communicable diseases, as the State board of health may require or give, and under the general supervision of the State board of health they shall cause all laws and regulations relating to public health and sanitary matters to be obeyed and enforced, and every member or officer refusing or neglecting to perform any duty imposed upon him by or pursuant to this chapter or by any statute, ordinance, by-law or rule and regulation relating to public health and sanitary measures shall be guilty of a misdemeanor. And any person who shall violate any of the provisions of this chapter, or any of the rules and regulations made by the State board of health to carry out the provisions thereof, or who shall willfully oppose or obstruct any health officer in performing his duty shall be guilty of a misdemeanor.

State Board of Health—Appropriation. (Chap. 23, Act Mar. 8, 1913.)

* * * * *
SEC. 12. State board of health. Necessary expenses for public health and medical examiners per annum:

	1913	1914
Superintendent's salary.....	\$2,000	\$2,000
Stenographer.....	750	750
Maintenance of offices, office supplies, and equipment.....	500	500
Printing and publicity.....	500	500
Necessary standard publications.....	250	250
Traveling expenses of superintendent.....	500	500
Board proper, four members:		
Per diem, four members, 96 days per year.....	480	480
Mileage, four members, four trips.....	250	250
Expenses, members.....	150	150
Total.....	5,380	5,380

Regulations—Definitions of Terms Used. (Reg. Bd. of H., July 25, 1913.)

The term "local health officer" as it appears in the following rules and regulations shall be so construed to mean any health officer appointed by the State board of health and medical examiners or any municipal town or township health officer otherwise appointed and whose appointment has been approved by the superintendent of the State board of health and medical examiners.

The term, "State board of health" as it appears in the following rules and regulations shall be so construed to mean the State board of public health and medical examiners.

Morbidity Reports. (Reg. Bd. of H., July 25, 1913.)

Physicians to report all cases of certain infectious and contagious diseases to the health authorities.—Every physician practicing in the State of South Dakota who shall treat or examine any person suffering from, or afflicted with, actinomycosis, anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), chicken pox, Asiatic cholera, diphtheria, (diphtheritic croup, membranous croup, putrid sore throat), epidemic dysentery, erysipelas, German measles, pneumonia, glanders (farcy), rabies (hydrophobia), leprosy, malarial fever, measles, puerperal

fever, relapsing fever, scarlet fever (scarlatina, scarlet rash), smallpox (variola, varioloid), tetanus, trachoma, trichiniasis, tuberculosis in any form, typhoid fever, whooping cough, or yellow fever, shall forthwith make a report in writing to the superintendent of the county board of health upon blanks supplied for that purpose, in which report he shall, over his or her signature, state the name of the disease, and the name, age, sex, color, nativity, and occupation, if any, of the person suffering therefrom, together with the street and house number of the premises in which said person may be located, or otherwise sufficiently designate the same, the date of the onset of the disease, the name and occupation of the householder in whose family the disease may have occurred, the number of children in said household attending school, and the name or names of the school or schools so attended, together with such other information relating to such case as may be required by said health authorities and the State department of health.

Communicable Diseases—Quarantine—Placarding—Disinfection. (Reg. Bd. of H. July 25, 1913.)

1. *The control of communicable diseases.*—The local health officer shall forbid, by notice posted upon the entrance to premises where a patient is sick with scarlet fever or diphtheria, any person except the attending physician, health officer, sanitary inspector, or in case of a death, a licensed embalmer, from going into or leaving such premises without his permission, or the carrying off or causing to be carried off any material whatever, until after the disease has abated and the premises, dwelling, and clothing have been rendered free from danger by means of such disinfection and cleansing as the State board of health may direct. A quarantine card must give the name of the disease and the regulations set forth above.

2. The other members of a household where a patient is under isolation for diphtheria or scarlet fever shall be under quarantine also, except as follows: If the patient be entirely isolated in a portion of the house used for no other purpose, and under the charge of a reliable attendant, the local health officer shall make a statement in writing to that effect and furnish copies thereof to such members of the household as may be employed at gainful occupations, other than teaching or such work as may bring them into contact with children. On receipt of such signed statement in writing, any person may pursue their ordinary vocations, provided they shall furnish a signed statement to said health officer and to their employer, declaring that they will not come in contact with the patient, the patient's room, or anything or any person which is in contact with the patient or the patient's room.

School children, teachers, or others having to do with children shall be excluded from day school, Sunday school, or any public or private gathering whatever for two weeks of observation after the last exposure to any case of scarlet fever or diphtheria within the household, except that in the case of exposure to diphtheria two consecutive negative cultures from both the nose and throat, secured at any time in accordance with regulation No. 26 after last exposure, shall free the person presenting them of all restraint. Residence in the household where diphtheria or scarlet fever exists shall constitute exposure.

A nurse or other person under quarantine with a patient ill with a communicable disease other than diphtheria, who wishes to be released before the quarantine period has expired, must be carefully examined by the health officer, and, if found to be free from the disease and not liable to develop the same, may be released from the quarantine after having had a full bath and a thorough disinfection of all the clothing worn or taken from the quarantined house.

3. No person or persons shall alter, deface, remove, destroy, or tear down any card posted by a local health officer. The occupant or persons having possession or control of a building upon which a quarantine notice has been posted shall within 24

hours after the destruction or removal of such notice by other than the local health officer, notify the local health officer of such destruction or removal.

4. Any person who is infected with smallpox, scarlet fever, or diphtheria and who is residing in a common lodging house or hotel, shall be removed therefrom under the supervision of the local health officer to a suitable hospital or place of quarantine. If an infected person can not be removed without danger to his health or for other sufficient cause, the local board of health shall make provision for the care of such individual in the house where he may be found, and may cause, if necessary, other persons in the house to be removed therefrom after having been submitted to the necessary disinfection.

5. Whenever a local health officer is informed or has reason to suspect that there is a case of smallpox, scarlet fever, diphtheria, epidemic cerebrospinal meningitis, anterior poliomyelitis, measles, typhoid fever, or tuberculosis within the territory over which he has jurisdiction, he shall immediately examine into the facts of the case and shall adopt the quarantine or employ the sanitary measures directed by the State board of health in dealing with such case or cases, and shall immediately notify the superintendent of said board of health of the appearance of such disease and the measures taken in relation thereto. A report of each case as it occurs shall be made to the aforesaid superintendent by the local health officer.

6. The local health officer shall see that the cleansing and disinfection of any house, building, car, vessel, or vehicle, or any part thereof, and of any articles therein likely to retain infection, is carried out before the same are released from quarantine.

7. When furniture, bedding, clothing, carpets, or other articles that have been exposed to infection through contact with infected persons or articles can not be disinfected, the same must be destroyed when so ordered by the local board of health.

8. No person shall let for hire, or cause or permit anyone to occupy, apartments previously occupied by a person ill with smallpox, scarlet fever, diphtheria, epidemic cerebrospinal meningitis, anterior poliomyelitis, measles, typhoid fever, or tuberculosis until such apartments have been disinfected under the supervision of the local health officer according to the instructions of the State board of health.

9. Whenever the order or direction of the local health officer requiring the disinfection of articles, premises, or apartments shall not be complied with the local health officer shall forthwith cause a placard, in word and form as follows, to be placed upon the door of the apartment or premises:

NOTICE.

....., S. Dak.
..... is a communicable disease. These apartments have been occupied by a
..... patient and have become infected. They must not again be occupied until my
orders directing the renovation and disinfection of same have been complied with.

This notice must not be removed, under penalty of the law, except by an authorized official.

.....,
Local Health Officer.

Dated, 191..

10. No person engaged in handling actual food or food products for sale, no salesman or clerk in grocery or butcher shops, in candy shops or bakeries, or other places where food is sold, and no waiter, waitress, cook or other employee of a hotel, restaurant, boarding house or other place where food is served shall handle actual food or food products for sale or consumption in any manner whatever, while infected with scarlet fever, diphtheria, smallpox, chicken pox, typhoid fever or measles; and any person shall be deemed infected if residing, boarding, or lodging in a household where any one or more of the diseases exist.

No milk, butter, or other food or food products to be eaten raw shall be sold or given to any party or delivered to any creamery or butter factory, store, shop, or market from a house where a case of scarlet fever, diphtheria, smallpox, chicken pox, typhoid fever or measles exist; nor shall any member of such household handle milk or milk

products for sale in any manner whatever. The sale of such food or food products is forbidden from farm premises where any of the specified diseases exist, except under the following conditions:

Complete separation of the farm work from the household concerned shall be made so that the household shall be quarantined against the rest of the farm, and no communication whatever shall continue. Those having to do with the food products shall eat, sleep, and work wholly outside the affected house and shall in no way handle anything or person whatever coming from the affected house or connected with it, nor shall those quarantined in the house handle any person or anything connected with the food or food products or those working with the food or food products in any manner whatever.

11. *Smallpox*.—The local health officer having knowledge of or having reason to suspect the existence of smallpox shall at once investigate and quarantine any building where the disease may exist.

12. The building or isolated apartments occupied by a smallpox patient shall be deemed infected and when vacated by death or removal of the patient shall, together with their contents, be thoroughly disinfected under the supervision of the local health officer.

13. Every physician shall immediately report, in writing, to the superintendent of the county board of health, the name of each smallpox patient under his care. A report must be made for each case as it appears in a family or household.

14. Every physician shall report, in writing, to the superintendent of the county board of health the death of any smallpox patient within 12 hours thereafter.

15. *Vaccination*.—Following an exposure of smallpox every individual must be vaccinated (within three days of the first exposure) or placed under the same isolated restrictions as the smallpox patients. If smallpox prevails in a community, or if the disease appears in a school, all unvaccinated teachers and pupils must be excluded from school for a period of three weeks unless vaccinated within three days of the first exposure. Failing to comply with this requirement, the school must be closed for a period of three weeks.

16. *Smallpox disinfection regulations*.—All persons having been ill with smallpox must have their clothing disinfected and take a disinfecting bath before being released from quarantine.

17. *Epidemic cerebrospinal meningitis and epidemic anterior poliomyelitis*.—Every case of epidemic cerebrospinal meningitis shall be reported to the local health officer at once. The patient shall be isolated for a period of at least two weeks from the onset of the symptoms. The discharges from the nose, throat, and mouth of the patient must be received on cloths and burned at once. After death or recovery of the patient all personal clothing and bedding, together with the contents of the room and the room itself, must be thoroughly disinfected under the supervision of the local health officer. In case of death a public funeral or reviewing of the remains of the deceased is forbidden. Every doubtful case of cerebrospinal meningitis must be classed as of epidemic type and cared for accordingly until proven otherwise.

18. Every case of epidemic anterior poliomyelitis shall be reported to the local health officer at once. The patient shall be isolated for a period of two weeks from the onset of the symptoms. All other children, teachers, or others having to do with children residing in the affected household shall be kept under observation for a period of three weeks from the date of the last exposure within the household. They shall not attend during the period day school, Sunday school, or any public or private gathering whatever. Residence, boarding, or lodging in a household during isolation therein of a patient suffering from anterior poliomyelitis shall constitute exposure. The discharges from the nose, throat, and mouth of the patient must be received on cloths and burned at once. After death or termination of isolation all personal clothing and bedding of the patient, together with the contents of the room and the room itself,

must be thoroughly disinfected under the supervision of the local health officer. In case of death a public funeral or reviewing of the remains of the deceased is forbidden. Every doubtful case of anterior poliomyelitis shall be classed as of epidemic type and cared for accordingly until proved otherwise.

19. *Scarlet fever, scarlatina, scarlet rash.*—The local health officer having knowledge of or having reason to suspect the existence of scarlet fever shall investigate, if necessary, and shall at once place under quarantine all persons afflicted with scarlet fever and those having the care of and coming in contact with such patients, except the attending physician, health officer, sanitary inspector, or in case of death a licensed embalmer.

The quarantine period for scarlet fever shall never be less than three weeks and may be longer. Quarantine must not be released until the health officer has satisfied himself that desquamation (or peeling) is completed and that the condition of the nose and throat is normal. But the patients shall not attend day school, Sunday school, or any public or private gathering whatever until a second examination by the health officer or medical school inspector, made not less than one week after release from quarantine, shall demonstrate a continuance of the normal condition of the nose and throat and the absence of desquamation. In case ear discharges exist the patient shall report weekly for examination by the health officer or medical school inspector and shall carry out such precautions to prevent the spread of infection therefrom as he shall prescribe. The quarantine must not be raised until three weeks or more, as the case may be, after the appearance of the last case in such family or household.

20. The apartments occupied by a scarlet fever patient shall be deemed infected, and when vacated by death or removal of the patient shall, together with their contents, be thoroughly disinfected under the supervision of the local health officer. All persons having occupied such apartments during the quarantine period must have their clothing disinfected and take a disinfecting bath before being released from quarantine. All disinfection prescribed in this regulation shall be a part of the control of the disease.

21. No milk, butter or other dairy products shall be sold or given to any party, or delivered at any creamery or butter factory, from a house quarantined because of the presence of scarlet fever therein.

22. Every physician shall immediately report to the local health officer, in writing, the name of every patient under his care, having scarlet fever, the state of his or her disease, and his or her place of dwelling. A report must be made for each case as it occurs in a family or household.

23. Every physician shall report in writing to the local health officer the death of any scarlet fever patient under his care, within 12 hours thereafter.

24. The local health officer must immediately report to the superintendent of the State board of health all cases of scarlet fever occurring within his jurisdiction.

25. *Diphtheria.*—The local health officer having knowledge of or having reason to suspect the existence of diphtheria shall, personally or through the attending physician, immediately secure a culture from the nose and throat of the suspected individual and submit the same to the State health laboratory for examination. A suspicious case must be quarantined as diphtheria until the diagnosis is confirmed or denied by the laboratory findings. Any doubtful clinical case of diphtheria must be quarantined even with negative findings from the first laboratory examination. Cultures may be submitted to municipal or private laboratories if the same have the indorsement of the State board of health.

26. The quarantine of diphtheria in cities and villages and for country districts within 2 miles of a city or village shall be continued until negative report has been made from the laboratory of the State of South Dakota or a laboratory approved by the State board of health on cultures taken by a physician or representative of the county or city health department from nose and throat of the person quarantined, followed by a

negative report on cultures from nose and throat not less than 24 hours thereafter, so as to constitute two successive negative reports on cultures from both nose and throat; provided, that the quarantine in no instance be continued for a period longer than six weeks from the time of the disappearance of all clinical symptoms of the disease.

27. A schoolteacher or pupil released from quarantine without two successive negative reports from a laboratory approved by the State board of health must not attend any public, private, parochial, church, or Sunday school, or any other public gathering, until two successive negative reports have been made.

28. In country districts more than 2 miles distant from a city or village the quarantine for diphtheria shall extend over the time of the illness and a period covering three weeks after all clinical symptoms of the disease have disappeared unless those in quarantine elect to use the culture method of quarantine described for cities and villages, paying physician for taking of cultures.

29. Teachers and children in country districts must be excluded from school until two successive negative reports have been made upon cultures taken after the end of the time quarantine period. Such patients in country districts may be taken at the end of the time quarantine period to a physician in order that cultures may be secured and submitted to the State health laboratory for examination.

30. A nurse or other person who has been under quarantine with a diphtheria case and who wishes to be released before the quarantine period has expired must be separated from the patient and have cultures taken from both nose and throat for examination in a laboratory approved by the State board of health. When such cultures are reported as negative the person from whom they are taken may be released from quarantine after having had a full bath and a thorough disinfection of all clothing to be worn or taken from the quarantined house.

31. The quarantine of diphtheria in public institutions where the population is resident shall be governed entirely by the laboratory examinations. Immediately after the appearance of diphtheria in an institution the local health officer or officers in cities of the first class shall notify the superintendent of the State board of health, who shall supply facilities for taking cultures, if necessary, from all residents of the institution. All individuals, whether sick or well, who are found in the institution harboring diphtheria bacilli shall be quarantined until a negative report is made from nose and throat cultures. They shall then be properly cleansed and disinfected and placed in other detention quarters until two later and successive negative reports on double examination of nose and throat are made, whereupon they may be released after proper disinfection.

32. After the laboratory diagnosis of diphtheria has been made the health officer in cities and villages, and for country districts within 2 miles of a city or village, shall forward specimens from both nose and throat of a patient, at least one every week, after the clinical symptoms have subsided, until two negative reports have been made as prescribed in regulation 26.

33. The apartments occupied by a diphtheria patient shall be deemed infected, and when vacated by death or removal of the patient they shall, together with their contents, be thoroughly disinfected under the supervision of the local health officer. All persons having occupied such apartments during the quarantine period must have their clothing disinfected and take a disinfecting bath before being released from quarantine. All disinfection prescribed in this regulation shall be a part of the control of the disease.

34. No milk, butter, or other dairy products shall be sold or given to any party, or delivered at any creamery or butter factory, from a house quarantined because of the presence of diphtheria therein.

35. Each physician shall immediately report in writing to the local health officer the name of every patient under his care having diphtheria, the state of his or her disease,

and his or her place of dwelling. A report must be made for each case as it occurs in a family or household.

36. Every physician shall immediately report to the local health officer the death of any diphtheria patient under his care, within 12 hours.

37. The local health officer must immediately report to the superintendent of the State board of health all cases of diphtheria occurring within his jurisdiction.

38. *Membranous croup*.—So-called membranous croup shall be classed, quarantined and cared for as diphtheria.

39. *Measles*.—The attending physician shall immediately report in writing to the superintendent of the county board of health the existence of any cases of measles that he may have under his care, the state of his or her condition, and his or her place of dwelling, and he shall also, at once, securely fasten in a conspicuous place upon the front of the dwelling in which said measles exist a placard displaying the name measles and stating that children in the house will not be permitted to leave the premises.

The placard must be kept on the house until at least 10 days after the appearance of the disease in the last case in such family or household.

Disinfection after measles is not necessary.

40. *Human tuberculosis*.—Every physician engaged in the practice of medicine in the State of South Dakota shall submit to the superintendent of the State board of health the full name, specific residence, and hygienic data on blanks furnished by said board for that purpose, of every person under his treatment for tuberculosis, within one week after the application of such patient for treatment.

Physicians in cities and villages where they are required by ordinance or sanitary regulation to report their tuberculosis cases to the local board of health will not be required to report such cases direct to the State board of health, provided the local health officer makes returns of all such cases reported to him to the State board of health at least once a month.

41. The superintendent of the State board of health shall keep a careful and accurate record of all cases of tuberculosis reported to him. The same shall not be for publication, but may be used by said board in the discharge of its duties.

42. Immediately after being notified of any case of tuberculosis the superintendent of the State board of health or the local health officer shall send to the attending physician the printed matter published by the State board of health relative to the control of tuberculosis. Such physician shall thereupon deliver the same to those in charge of the patient.

43. No person afflicted with tuberculosis shall dispose of the sputum or other infectious bodily excretion or secretion as to cause offense or danger to any person or persons. No person in an infectious stage of pulmonary tuberculosis shall handle in any capacity actual food or food products for sale, including milk, butter, or other dairy products, nor act as salesman or clerk, handling food or food products in milk, cream, or dairy-product shops, grocery or butcher shops, candy or bakers' shops, or other places where food is sold; nor shall any such person act as waiter, waitress, cook, or other employee engaged in handling food of any hotel, restaurant, boarding house, or other place where food is served.

44. Any health officer receiving a complaint to the effect that the foregoing rule is being violated shall investigate the same, and if it appears that the violation complained of is such as to cause offense or danger to any person occupying the same room, apartment, house, or part of house he shall serve notice upon the person so complained of, reciting the alleged cause of offense or danger, and requiring him or her to dispose of the sputum or other infectious bodily secretion or excretion in such a manner as to remove all reasonable cause of offense or danger.

45. The apartments of any tuberculosis patient shall be deemed infected, and when vacated by death or removal of the patient shall, together with its contents, be thor-

oroughly disinfected under the supervision of the local health officer. All disinfection prescribed in this rule shall be a part of the control of the disease.

46. It shall be the duty of any person having knowledge of the facts to notify the local health officer within 24 hours after the death or removal of any person with tuberculosis from any apartments.

47. *Typhoid fever*.—Every physician engaged in the practice of medicine in the State of South Dakota shall submit to the superintendent of the State board of health the full name, specific residence and hygienic data, of every person under his treatment for typhoid fever, or suspected typhoid fever, within one week after the application of such patient for treatment.

Physicians in cities and villages where they are required by ordinance or sanitary regulation to report typhoid fever to the local board of health will not be required to report such cases direct to the State board of health provided the local health officer makes returns of all cases reported to him to the State board of health at least once a month.

48. The superintendent of the State board of health shall keep a careful and accurate record of all cases of typhoid fever reported to him. The same shall not be used for publication, but may be used by said board in the discharge of its duties.

49. Immediately after being notified of any case of typhoid fever, the superintendent of the State board of health, or the local health officer, shall send to the address of the attending physician the printed matter published by the State board of health relative to the control of typhoid fever. Such physician shall thereupon deliver the same to those in charge of the patient.

50. No person affected with typhoid fever or in charge of a typhoid-fever patient shall so dispose of the excreta or other infectious bodily secretion or excretion as to cause offense or danger to any person or persons.

51. Any health officer receiving a complaint that the foregoing rule is being violated shall investigate the same and if it appears that the violation complained of is such as to cause offense or danger to any person he shall serve notice upon the offending person, reciting the alleged cause of offense or danger, and requiring that the bodily secretions or excretions complained of be disposed of in such a manner as to remove all reasonable cause of offense or danger.

52. It shall be the duty of those having charge of a typhoid-fever patient to see to it that the excreta, or other infectious bodily secretions or excretions, from such patient are properly disposed of and disinfected.

53. The apartments occupied by any typhoid-fever patient shall be deemed infected, and when vacated by death or removal of the patient shall, together with their contents, be thoroughly disinfected under the supervision of the local health officer. All disinfection prescribed in this rule shall be a part of the control of the disease.

54. It shall be the duty of any person having knowledge of the facts to notify the local health officer within 24 hours after the death or removal of such person affected with typhoid fever from any apartments.

55. Whenever typhoid fever prevails in a locality the local board of health shall immediately appoint a competent inspector, or inspectors, to patrol the city, village, or district involved. Such inspector shall report to the local board of health all water-closets, privies, vaults, and cesspools which are not fly proof, with screened doors and windows, and all vaults and cesspools which are not water-tight, dark, and fly proof. The local board of health shall thereupon enter its proper order in the premises to the end that all such water-closets and privies shall be made fly proof and all such cesspools and vaults dark, water-tight, and fly proof.

56. Any drinking water shown to be a positive or probable source of disease shall be condemned either by the local board of health or by the State board of health, and when so condemned shall not be used again as a drinking-water supply until declared safe by the condemning party.

57. *Rabies*.—When an animal suspected of having rabies has bitten a human being the fact should be immediately reported to the county health officer, who shall secure or cause to be secured such animal alive and without injury, where this can be accomplished with safety. The animal shall be confined in a safe, quiet, roomy, and comfortable place for a period of two weeks if death does not intervene. A report giving full particulars shall be sent immediately to the superintendent of the State board of health. This report shall include the name of the locality in which the biting occurred (city, village, or township); the date of biting; the name, residence, and address of the owner of the animal; the full name or names of the persons bitten, together with place of residence of each; the names, addresses, and residences of all owners of animals which have been bitten by the animal in question, together with a list and description of the animals bitten and the disposition made of same.

58. When it becomes necessary to kill such suspected animal, it must be done in such a way that no injury will be made to the brain or spinal cord. When an animal suspected of having rabies dies from the disease or is killed, the head and several inches of the neck must be cut off and sent to the State health laboratory. It should first be wrapped in clean cloth and then carefully packed in a quantity of sawdust and ice, using such an amount of ice as will insure its reaching the laboratory in a cool condition.

59. *Erysipelas*.—Every case of erysipelas shall be isolated in a room used for no other purpose. No dressings, bed, bedding, or clothing, eating utensils, or other things used or touched by the patient shall be removed from the room until disinfected. No person except the necessary attendants shall enter the room, nor shall anyone leave the room without thorough disinfection of the clothing or person, especially the hands, etc., which may have been in contact with the patient, the patient's bed, bedding, clothing, eating utensils, or other things used or touched by the patient. Where the mucous membrane of the orifices of the patient's body are involved disinfection of all the discharges of the orifices concerned shall be made.

60. No midwife, obstetrical nurse, or other person having to do with an erysipelas case shall, during the same period, conduct confinements or attend lying-in cases, dress operative or other wounds, or care for very young children; nor shall any such person milk or handle milk or other raw food products for sale.

61. *Diseased eyes among infants*.—Whenever one or both eyes of an infant become inflamed at any time within two months after its birth it shall be the duty of any midwife, nurse, parent, or other person having charge of such infant to report the facts of such affection to the local health officer of the county in which the person having charge of such infant resides within 12 hours after ascertaining the fact.

62. Any health officer to whom may have been reported a case of eye disease in a child under 2 months of age shall forthwith visit such child and provide immediate medical treatment, unless said child is already under the treatment of a competent medical practitioner.

63. *Trachoma*.—Every physician engaged in the practice of medicine in the State of South Dakota shall submit to the superintendent of the county board of health the full name, specific residence, and hygienic data of every person under his treatment or observation for trachoma or suspected trachoma within one week after the application of such patient for treatment.

64. The superintendent of the county board of health shall forward same information to the superintendent of the State board of health in his monthly reports.

65. In such counties where schools are attended by Indian pupils the local health officer shall at least every 90 days examine said schools, and if any pupils are found to be affected with trachoma in the active stage they shall be excluded from school or close association with other individuals, unless under the constant care and strict

supervision of a competent physician, as in such cases where schools are conducted by the United States Government and have a regularly appointed physician in charge.

* * * * *

100. *Protection of library books.*—Library books that have been in any house occupied by a patient suffering from diphtheria, scarlet fever, smallpox, tuberculosis, or typhoid fever must be reported to the local health officer and by him to the librarian with a warning that such books may be a means of infection. Such books must not again be placed upon the shelves of the library until they have been thoroughly disinfected under the supervision of the local health officer. Unless books are of special value, they shall be destroyed by the library authorities rather than returned to the shelves for future use. Books must not be loaned to those residing in rooms or apartments occupied by patients suffering from diphtheria, scarlet fever, smallpox, tuberculosis, or typhoid fever, unless the same are destroyed after use in such rooms or apartments.

County Boards of Health—County Health Officers—Duties of. (Reg. Bd. of H., July 25, 1913.)

66. The several county health officers shall make quarterly reports to the State board of health as to the general sanitary condition of their counties, such reports bearing especially upon matters relating to communicable diseases. Especial attention must be given to the reporting of rabies and glanders.

67. The several county health officers shall keep close watch over apparent epidemic and endemic diseases existing within their jurisdictions, and if a question arises as to the proper care of such diseases, they shall notify the superintendent of the State board of health in order that an investigation may be made.

68. The several county health officers shall note the condition of slaughterhouses, rendering establishments, starch factories, and paper mills within their jurisdiction, and shall report such conditions to the superintendent of the State board of health from time to time as necessary, or upon the request of said superintendent.

69. The county board of health shall at all times bring to the attention of the State board of health any conditions which they might deem in need of sanitary regulation.

70. The county health officers shall when called by the State board of health assemble to discuss general sanitary problems and to present at such conferences the special sanitary needs of their individual districts.

71. County health officers shall make such investigations and reports and obey such directions relating to sanitary problems as shall be prescribed from time to time by the State board of health.

72. Upon application of not less than five health officers, the superintendent of the State board of health shall call a special conference to discuss special or local sanitary problems, the time and place of meeting to be determined by the superintendent of the State board of health.

* * * * *

County superintendents of health in their monthly reports shall furnish a full report to the superintendent of the State board of health of all services rendered pertaining to and in the discharge of their duties and for which bills are rendered to the county commissioners of their respective counties.

Water and Ice Supplied by Common Carriers—Regulations for. (Reg. Bd. of H., July 25, 1913.)

73. Water supplied by common carriers on cars, vessels, or vehicles operated in intrastate traffic for the use of passengers shall be furnished under the following conditions:

(a) Water shall be certified by the State or municipal health authority within whose jurisdiction it is obtained as incapable of conveying disease: *Provided*, That water in regard to the safety of which a reasonable doubt exists may be used if the same has been treated in such a manner as to render it incapable of conveying diseases and the fact of such treatment is certified by the aforesaid health officer.

(b) Ice used for cooling such water shall be from a source the safety of which is certified by the State or municipal health authority within whose jurisdiction it is obtained, and before the ice is placed in the water it shall first be washed with water of known safety and handled in such a manner as to prevent its becoming contaminated by the organisms of infectious or contagious diseases: *Provided*, That the foregoing shall not apply to ice which does not come in contact with the water which is to be cooled.

(c) Water containers shall be cleansed and thoroughly scalded with live steam at least once in each week that they are in operation.

74. Samples of water and artificial ice from each and every source of supply shall be subjected to bacteriological examination and chemical examination at least once in every six months by the proper State or municipal authority within whose jurisdiction the supply is obtained, or by other person or persons competent to make such examinations and whose results will be accepted by the State or municipal health authority whose duty it is to issue certificates. Each new crop of natural ice shall be examined and certified before use.

75. The common carrier desiring a certificate of the State or municipal health authority within whose jurisdiction the water or ice is obtained should make application therefor.

76. After the necessary examinations have been made the certificates shall be issued on the form which is appended, one copy to be delivered to the common carrier, one copy to be forwarded to the Surgeon General, United States Public Health Service, Washington, D. C., and one copy to be retained as a matter of record and for future reference.

77. Whenever there is an unusual prevalence of typhoid fever, dysentery, infantile diarrhea, or other water-borne disease in a locality from which common carriers receive water and ice, an additional examination of the water and ice shall be made and a supplemental certificate made by the proper certifying authority and forwarded as above.

[CERTIFICATE OF EXAMINATION OF WATER AND ICE FOR PASSENGERS IN INTRASTATE TRAFFIC.]

This is to certify that the supplied at
and for the use of passengers in intrastate traffic been examined and found free from
organisms or materials liable to cause disease in man. Date of examination
Signed
Title

Address

NOTE.—Make certificate in triplicate. Deliver one copy to the common carrier, forward one copy to the Surgeon General, Public Health Service, Washington, D. C., retain one copy for reference.

State Health Laboratory—Work to be Done. (Reg. Bd. of H., July 25, 1913.)

78. The director of the State health laboratory shall make or cause to be made, without delay, all investigations, analyses, tests, etc., as shall be required by the State board of health or any of the members of the several county boards of health, or any material, of any description, that may be furnished him for the express purpose of determining all matters affecting the public health.

79. Diphtheria cultures, tubercular bacilli, Widal test for typhoid, anthrax in the human family, brains of animals, and other matters pertaining to the public health of South Dakota shall be free to the physicians of the State.

80. An ordinary fee shall be charged for the following examinations: Pathological specimens, gastric contents, pus, blood, urinalysis, suspected pathological secretions and excretions.

Maternity Hospitals—Licensing and Regulation. (Reg. Bd. of H., July 25, 1913.)

81. *Relating to the welfare of infants.*—All lying-in houses shall be licensed and the local health officer of any city, village, or township shall inspect those within his jurisdiction and satisfy himself that they are properly conducted and licensed.

82. All boarding places for infants shall be licensed and the local health officer shall inspect those within his jurisdiction and satisfy himself that they are properly conducted and licensed. The local health officer shall be entitled to a fee of \$2 for making the necessary inspection and issuing the licenses provided for under regulation above. A license shall expire on the 1st day of January after its issuance. It may be renewed after reinspection upon payment of a renewal fee. Such renewal shall hold for one year. The license and the renewal fees shall be paid by the party licensed.

83. Each health officer issuing a license as provided for above shall file a copy of the same with the superintendent of the State board of health within 10 days after its issuance. Such license shall contain the certificate of the health officer to the effect that he has personal knowledge of the applicant, and that said applicant is of good moral character. The license shall also contain a description of the premises to be occupied as a lying-in house or boarding place for infants. No license shall be issued unless the premises and furnishings are in proper sanitary condition. A license issued permitting the operation of a boarding place for infants must state that the applicant for same is competent to take care of children under 2 years of age, and must also state the number of children which may be received at any one time.

84. Physicians and midwives licensed to practice in the State of South Dakota may be licensed to receive into their premises persons to be cared for during childbirth, upon payment of license fee and renewal as provided for under regulation 82.

85. The birth of a child in a lying-in house or in the home of a physician or midwife must be reported to the health officer by the person in charge within three days, giving the date of birth, sex, and name of child, together with the names, nationality, and residences of the parents if known, and such other information as may be required in the reporting of births.

86. All parties receiving children as provided for under regulation 82 shall within three days after the reception of each child report to the licensing health officer the name and age of the child and the name and place of residence of the person placing such child in such institution.

87. The health officer issuing a license may at any time enter upon the premises licensed and inspect the same and may at any time, upon proof satisfactory to him that such premises are unfit or such person improper to continue in business, revoke the license.

88. The officers of any incorporated society for the prevention of cruelty to children may at all reasonable times enter and inspect the premises where children are received, boarded, or kept, and see that the provisions of these regulations are duly enforced.

89. The superintendent of the State board of health or other representative of said board duly delegated may at all times reasonable enter and inspect the premises where children are received, boarded, or kept, and also has the authority to inspect the children as to their physical condition.

90. No person shall offer, either by advertisement in the public press or in any other way, to dispose of the child of another as an inducement for anyone to come to their premises during confinement in childbirth or to place a child in a boarding house of the type and character described in the foregoing regulation.

91. The local health officer of any city, village, or township shall inspect all lying-in houses, boarding houses, or places where children are kept at least twice a year, or oftener upon complaint of reputable persons.

Schools—Control of Communicable Diseases. (Reg. Bd. of H., July 25, 1913.)

92. *Protecting the health of school children.*—The local board of health of every city or village shall require every teacher to report each morning to the head of the school the case of every child belonging to his or her room who shows signs of being in ill health or suffering from a communicable disease; also every child returning to school after an absence on account of illness of unknown cause. The head of the school on receiving such report shall as soon as possible thereafter notify the local health officer and refer to him all such cases for examination. Whenever in the opinion of the head of the school a child's condition requires that he or she be sent home, and whenever a child shows symptoms of smallpox, scarlet fever, diphtheria, measles, chicken pox, tuberculosis, influenza, tonsillitis, erysipelas, whooping cough, mumps, itch, ringworm, or trachoma, he or she shall send such suspect home immediately or as soon as a safe and proper conveyance can be found, and the local health officer shall be notified at once by the head of the school of such case.

93. In the event of any school child having smallpox or having been exposed to the disease while in attendance at school, the building where such child is in attendance shall be closed by the order of the local health officer and kept closed until the place has been thoroughly disinfected and cleansed under the supervision of said local health officer.

In the event of the board of education having passed a regulation requiring the vaccination of all school teachers and pupils, the school may be opened after the above disinfection and cleansing; otherwise the school shall be kept closed until the local board of health, with the approval of the State board of health directs otherwise.

94. No principal, superintendent, or teacher of any school, and no parent, master, or guardian of any child or minor, having the power and authority to prevent, shall permit any such child or minor having smallpox, scarlet fever, diphtheria, measles, chicken pox, tuberculosis, influenza, tonsillitis, erysipelas, whooping cough, mumps, itch, ringworm, or trachoma, or any other dangerous communicable disease, or any child residing in a house where any such disease exists or has recently existed, to attend any public, private, parochial, church, or Sunday school, until the local health officer of the city, village, or township shall have given his permission for such attendance.

95. A schoolhouse wherein a child suffering from scarlet fever has been present shall be deemed infected and shall be temporarily closed and thoroughly disinfected and cleansed under the supervision of the local health officer before the reopening of the school. Such disinfection and cleansing shall be done according to the direction of the State board of health in its circular of disinfection.

96. All schoolhouses shall be inspected from time to time by the local health officer who shall forthwith order that the place be closed and kept closed until it has been properly disinfected or cleansed, or both, as the case may require.

Common Drinking Cups and Roller Towels—Prohibited in Public Places. (Reg. Bd. of H., July 25, 1913.)

97. *Common drinking cup.*—No person, company, or corporation having charge or control of any hotel, restaurant, theater, hall, store, schoolhouse, church, stations, railroad train, steam or electric car, or other institution or conveyance frequented by the public, or which may be used for the purpose of a public assembly, or as a place of employment, may be permitted to furnish any cup, vessel, or other receptacle to be used promiscuously as a common drinking cup, or permit any cup, vessel, or other

receptacle to be used by more than one person for the common, indiscriminate, or promiscuous use or purpose of drinking therefrom.

98. *Roller towel.*—The use of roller towels, or any large towel which may be used for more than one service, shall not be permitted in any hotel, schoolhouse, restaurant, boarding house, saloon, club house, public lavatory or wash room, nor in any public or private place where a number of people congregate, in the State of South Dakota; but instead the owners, proprietors, managers, or other persons in charge of such places shall provide a sufficient quantity of individual towels of any fabric approved by the State board of health, so that each person may have a clean one for his own use.

Public Buildings—Plans Must be Approved by State Board of Health. (Reg. Bd. of H., July 25, 1913.)

99. Whenever it is proposed to build any school, hospital, almshouse, prison, or other public institution, the plans and specifications for same in respect to sanitary conditions shall be submitted to and filed with the State board of health, and no such building shall be constructed until the sanitary arrangements of same have been approved by said board.

Schools—Construction of Buildings—Sanitary Regulation. (Reg. Bd. of H., July 25, 1913.)

101. *Location of buildings.*—School buildings should be placed on high ground at as great a distance as possible from low, marshy ground, and from railroads, manufacturing plants, and other sources of noise, smoke, and dust.

Light from the east is most desirable for class and study rooms; from the north for rooms for laboratory, manual training, drawing, and similar work. Light from the west holds second place only to light from the east. South light should never be used for any of the above-indicated rooms.

102. *Plans and specifications.*—All plans for buildings of four rooms or more must include plans and specifications for plumbing, heating, ventilation, and sewage disposal; and for all other buildings where such equipments are to be installed.

103. *Capacity of rooms.*—(a) No schoolroom or class-room, except when used as an assembly room, shall provide less than 18 square feet of floor space and 216 cubic feet of air space per pupil; and no ceiling of buildings hereafter to be erected shall be less than 12 feet from the floor.

(b) The floor space for rooms used for manual training or home economics shall have at least 35 square feet for each pupil.

104. *Heating and ventilating.*—(a) A system of ventilation shall be capable of furnishing not less than 30 feet of cubic air per minute for each person that the room will accommodate when the difference of the temperature between the outside air and the air in the room shall be 30° F. or more.

(b) In the gravity system of ventilation in connection with a furnace or steam plant, the flues for admitting fresh air into the room shall have horizontal area of not less than 1 square foot to every 160 square feet of floor area in the room. There shall be in a steam gravity system the equivalent of at least 50 square feet of indirect radiation for each square foot of horizontal area of fresh-air flues. An accelerating coil, the equivalent of not less than 20 square feet, shall be provided for each vent flue.

(c) The flues for a plenum fan system of ventilation shall have a horizontal area of not less than 1 square foot for every 270 square feet of floor area of the schoolroom. The ventilation of school buildings by this system shall be so regulated that the air pressure in any classroom shall be in excess of that of the outside air.

(d) Warm-air registers shall be placed about 8 feet above the floor and shall have an open area of at least 125 per cent of the cross-sectional area of the flue. Vent openings

shall be placed at the floor level on the same side of the room as the warm-air flues and should have no registers.

(e) The buildings of four rooms at least, equipped with jacketed stoves or furnaces, the fresh-air intake and the chimney or vent flue shall have a cross-section area equivalent to one-fourth of 1 per cent of the area of the room, but in no case shall the intake pipe be less than 14 inches in diameter, nor the chimney or vent flue less than 16 inches by 16 inches inside measurement.

(f) Flues from hoods in chemical laboratories, from domestic science rooms, and from toilet rooms shall extend independently to the roof of the building.

(g) The direct-indirect system of ventilation shall not be used. By "direct-indirect" is meant the introduction of cold air from the outside of the building at the base of a direct radiator.

105. *Lighting.*—(a) The glass area of windows shall equal one fifth of the floor area of the schoolroom. The top of the windows shall be as near the ceiling as the mechanical construction of the building will allow.

(b) In all rooms not exceeding 25 feet in width the light shall be admitted at the left of the pupils when seated. High windows may however be permitted on the right side of the pupils when seated, but the sills of such windows shall be at least 7 feet from the floor.

106. *Shades.*—Translucent, instead of opaque shades shall be used in the windows for controlling the light.

107. *Cloakrooms and furniture.*—(a) A cloakroom shall not be less than 6 feet wide and shall have at least one outside window.

(b) Each room should be seated with single desks of suitable size.

108. *Water supply, etc.*—(a) Sanitary drinking fountains or individual drinking cups shall be used exclusively in the public schools. When it is necessary to use a water receptacle a tank with a faucet shall be provided. The common drinking water pail will not be permitted.

(b) In communities where there is no public water supply, tubular or driven wells must be provided to furnish water for drinking purposes. Water from a dug well shall not be used for drinking purposes in a public school.

(c) Water for washing the hands must be provided. Towels for common use are prohibited.

109. *Toilets.*—Toilet rooms shall be so located as to receive direct light and air from the outside. Local vents for water-closets, as well as for general ventilation of the room, shall be provided. The room vent openings shall be near the ceiling.

110. *Outdoor toilets.*—Outdoor toilets shall be of such construction as to allow their being easily kept clean and in a sanitary condition. Doors must swing out and must be provided with springs or weights to insure closing. Each outdoor toilet must be provided with at least one window. All windows and openings except doorway must be screened. Provisions should be made for heating outdoor toilets.

111. *Fire alarm.*—All school buildings of four rooms or more must be provided with an efficient fire-alarm system.